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**ECONOMIC FLUCTUATIONS IN THE
UNITED STATES AND THE
UNITED KINGDOM
1918-1922**

**LEAGUE OF NATIONS
GENEVA
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PROSPERITY AND DEPRESSION (Revised and Enlarged Edition)

STATISTICAL TESTING OF BUSINESS CYCLE THEORIES

WORLD ECONOMIC SURVEY 1941/42

EUROPE'S TRADE

THE NETWORK OF WORLD TRADE

COMMERCIAL POLICY IN THE INTER-WAR PERIOD

WARTIME RATIONING AND CONSUMPTION

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RAW MATERIALS AND FOODSTUFFS: PRODUCTION BY COUNTRIES,
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URBAN AND RURAL HOUSING

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PREFACE

One of the major and most immediate tasks of statesmanship that presents itself at the end of any great war is that of assuring the re-employment of men demobilized from the armies or munitions factories in peacetime occupations. That problem cannot be solved by hasty improvization at the last moment, but is necessarily of concern to statesmen during the course of hostilities. It is in fact being carefully considered by many governments today and plans for the future are being laid.

The two studies of past experience contained in this volume are intended to be a contribution to thought on this subject. They relate to two countries only, the United States and the United Kingdom. In both studies the same procedure has been adopted. The course of events from the armistice till about the end of 1921 is traced first, a section is then devoted to a consideration of policy and a final section added summarizing the salient facts of these crucial years. In broad outline the experience of these two countries was similar; immediately after the cessation of hostilities there was a brief period of uncertainty, hesitancy and adaptation during which unemployment was considerable as men moved from one occupation to another. This was followed by a period of great economic activity lasting for about 15 months which culminated in a price boom; the boom burst in 1920 and then for the first time unemployment became serious. As is stated in the last sentence of this volume, "The major problem of the transition from war to peace economy . . . proved itself to be not one of getting demobilized men and machines re-employed, but one of the cyclical effects of the perhaps unavoidably bumpy nature of post-war pent-up demand". This work deals, therefore, rather with cyclical movements in economic activity than with the detailed plans that were made to facilitate re-employment.

There is no reason why on another occasion the course of events should take a like form. The forces at play will not again have exactly the same relative strength and the ups and downs of economic activity will be largely determined by the policies pursued. But the major features of the problem are likely to make themselves apparent again: a sudden great increase in the supply of labour available for civilian purposes, a pent-up de-

mand for civilian goods of all sorts seeking liberation, an industrial equipment that has been converted from civilian to military purposes, a scarcity of raw materials or of raw materials in the right place, public finances strained by the burden of war, war time controls affecting at once supply, demand and prices.

The purpose of these studies is to show how these factors presented themselves after the last world war, how they were moulded by policy and what were the effects of policy on economic activity. The international effects of policy have, however, only been mentioned incidentally. It was felt desirable to keep this survey as brief as possible and not to interrupt the sequence of thought or events by introducing what would necessarily be a considerable volume of material relating to other parts of the world. The two countries selected are of interest as representing the problem when it is not accentuated by inability to purchase raw materials. Most European countries suffered from such inability and the boom of 1920 and depression of 1921 were dispersed in the rarified atmosphere of inflation or hyperinflation.

Other volumes in this series, of which a study of commercial policy has already been published, will deal with the international aspects of post-war problems.

Our thanks are due to the Rockefeller Foundation for assistance that rendered the preparation of this publication possible.

A. LOVEDAY,
*Director of the Economic,
Financial and Transit Department.*

*League of Nations,
October 1942.*

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PART I

ECONOMIC FLUCTUATIONS IN THE UNITED STATES, 1918-22

1. *Essential facts, 1914-1920.*

In the United States the first half of 1914 had been a period of depression. It was aggravated by the financial panic and the sudden interruption of exports to Europe which accompanied the outbreak of the World War. Recovery came in 1915; the war demands of the Allies made 1916 a boom year; the first quarter of 1917, in anticipation of the United States entering the war, was marked by speculation and production up to capacity. After her entry, the calling to the colours of four million men (some 10% of the whole gainfully occupied population) prevented a further expansion of production, which kept about stable till the end of the war.¹

A sustained rise of prices did not begin until the autumn of 1915. During the one and a half years that followed prices rose rapidly, and on the whole with ever-increasing speed, which became greatest in the spring of 1917. This last and greatest advance was cut short after July 1917, and for a full year the price level was kept fairly stable. Business conditions and the huge war orders which the Government was placing favoured a further advance in prices. "It is difficult to explain the checking of the rise on any other ground than the substantial success of the Government's efforts to control prices through the Food and Fuel Administrations, the purchasing bureau of the War and Navy Departments, and the Price-Fixing Committee of the War Industries Board."²

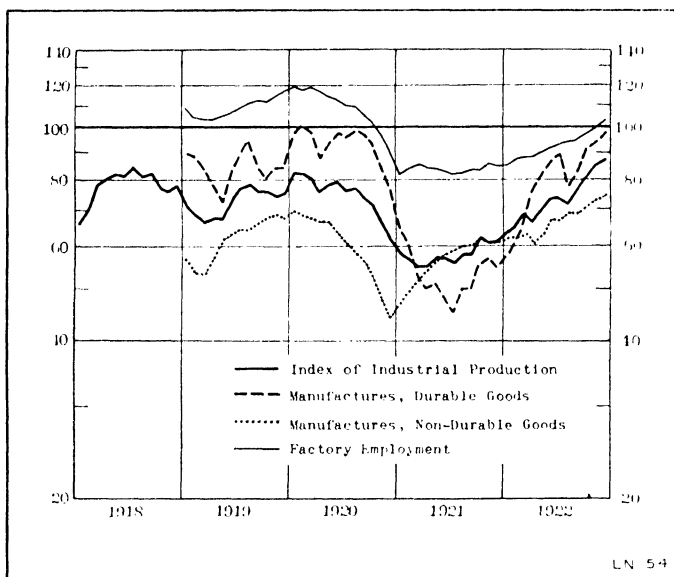
After the armistice, adjustment to peace economy was quickly accomplished. Production and employment temporarily fell till

¹ Cf. J. M. Clark, "The Costs of the World War to the American People," page 37. The production index probably tends to overestimate production in wartime, since it does not cover services, and these are reduced most.

² W. C. Mitchell, "International Price Comparisons," page 11. Department of Commerce, Washington, 1919. To these measures of control should be added, *inter alia*, the policy of heavy taxation after 1917; the propaganda made for the war loans; the restriction of credit for non-essential purposes through the operation of the Capital Issues Committee; the priority schemes of the War Industries Board.

about April 1919, when they were some 10 to 15% below the previous peak. But wholesale prices declined by only 5%. This few months' slackening is, therefore, to be considered as a period of technical adjustment rather than as a real business recession. During the same period, demobilization proceeded at a rapid rate; by the middle of 1919, 75% of the army had been demobilized.

Diagram 1—Industrial Activity and Employment in the United States, 1918-1922
 1935-39 = 100
 Corrected for Seasonal Variation

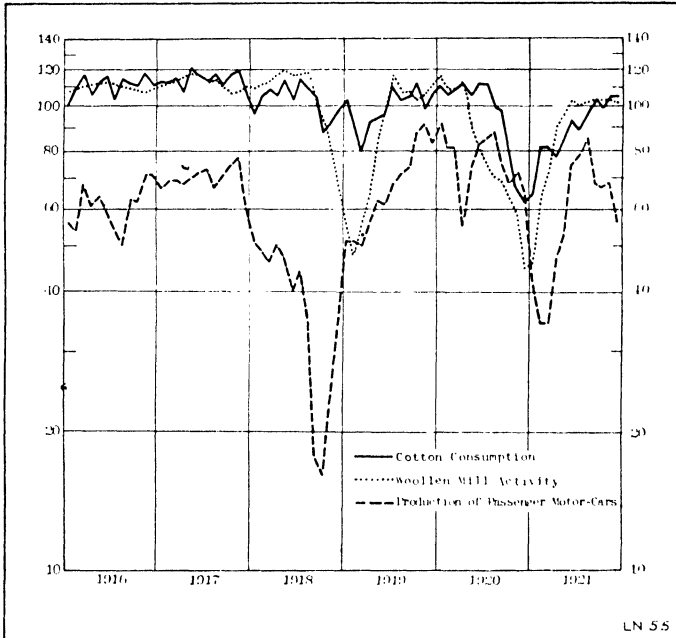


There followed a steep and short boom, lasting till the spring of 1920,¹ when all types of business fell off. During the summer, the recession spread slowly. But in the autumn production and prices fell precipitously. By the end of the year, most indices had nearly reached bottom. Diagrams 1, 2 and 3 throw some light on the nature of these movements of production and employment. They are all drawn on a logarithmic scale. Industrial production as a whole dropped by 20% between September

¹ According to the National Bureau of Economic Research the end of the post-war boom came in the first quarter of 1920 in the United States, in the second quarter in the United Kingdom and in the third quarter in France; in Germany, expansion continued for three years without interruption from the middle of 1919.

1918 and March 1919. From the latter month production rose until January 1920, when it was back at the war-time level, dropping off slightly in March. The decline continued till March 1921, when production was one third below its previous peak. Employment showed similar fluctuations, though with a somewhat lesser amplitude.

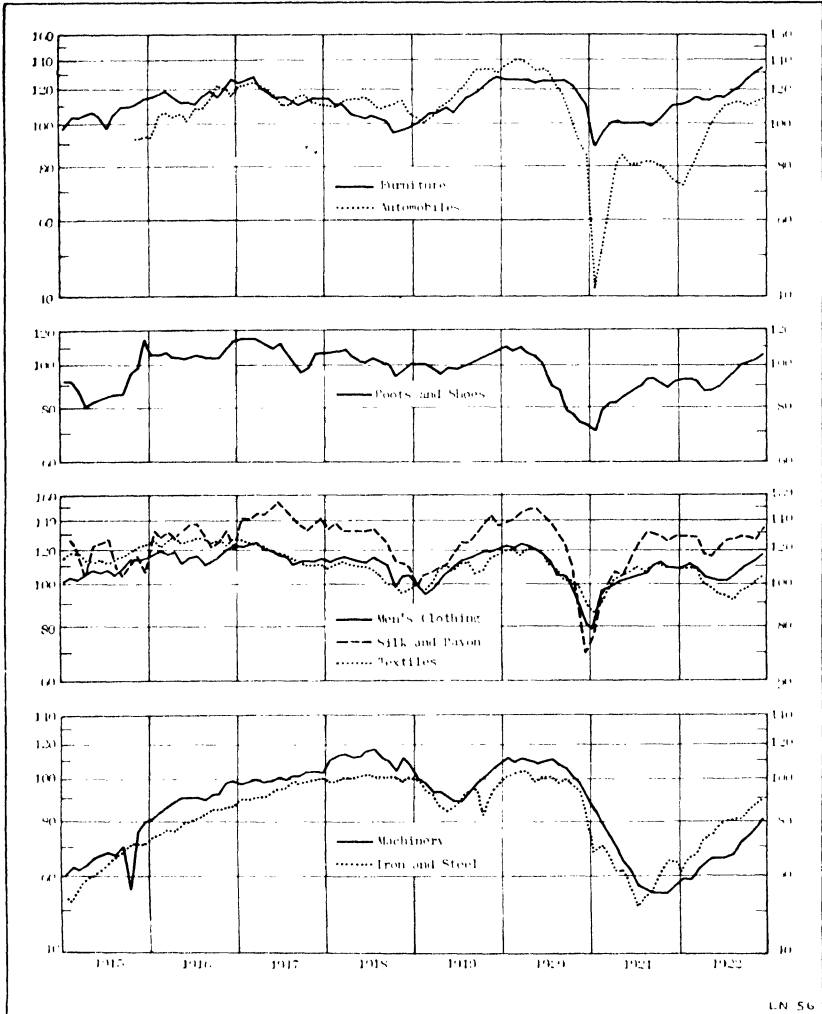
Diagram 2—Output in Various Industries, 1916-1921
Trend Value, January 1st, 1923 = 100
Corrected for Seasonal Variation



The index of total production conceals important divergencies of its component parts. In its first stages the recovery early in 1919 was due mainly to the revival of demand for consumer goods. Indeed the manufacture of durable goods in the aggregate, though not of durable consumers goods, fell off steeply between January and May 1919, having been maintained relatively stable in the closing months of the preceding year by war contracts in course of fulfillment. Consumers' demand for non-durable and durable goods seems to have recovered almost simultaneously. Employment in the furniture trade which had been seriously depleted of labour during the war started to rise immediately after the Armistice, and so did the production of

passenger motor cars which had been progressively curtailed from the autumn of 1917.¹ Special factors made for a sharp recession in the output of textiles in the first few months after the Armistice. Textile production had been maintained at full ca-

Diagram 3—Indices of Factory Employment, 1915-1922
January 1919 = 100



¹ Cf. also the steep rise in residential construction in the first half of 1919 as shown in Diagram 5.

capacity through the later years of the war, a large part of the industry working on war orders. The fall in raw material prices which actually occurred and the further fall anticipated in view of large stocks of wool in the hands of the British Government made for a serious though very short depression, in particular in the wool industry.

The widest movements in Diagram 3 are shown by the men's clothing industry, in which employment increased by nearly 50% between January 1919 and May 1920 and then fell to under one half in seven months. That the demand was maintained relatively long in this industry was probably due in part to the fact that the whole army was not demobilized at once and in part to seasonal factors.

It is striking that, as shown in the diagram of aggregate movements (Diagram 1), the activity of the durable goods industry was maintained, albeit somewhat unevenly, for almost eight months after the decline in non-durable goods had made itself apparent. This was probably due to a large amount of unfilled orders. A similar lag occurred in the subsequent recovery which started only in August 1921 in the production of durable goods as against January of that year for non-durable goods.

The shift in employment from industry to industry seems to have been relatively slight (Diagram 3). Employment in the machinery industry increased by 72% between June 1915 and the summer of 1918. In June 1920 it was only 8% below the war peak, the industry presumably losing some men especially to the automobile industry. None of the other curves shown suggest any large scale shifts.

2. *Interpretation of the post-war events.*

In the period under review, American economists were, of course, well aware of the fact that American economic life had shown cycles, more or less regular, for a long period in the past. This may explain why the 1919-20 boom and depression provoked relatively little alarm among contemporary observers. The development was even, to some extent, considered as reassuring, in that it showed that "normal" pre-war economic life had been restored. In general, the tendency was to consider the events merely as business cycle phenomena and not as an after-effect of the war.¹

¹ Hence, for example, the measures to mitigate the cycle, put forward by the President's Conference on Unemployment in September 1921 were of a very general character.

Yet to label these events a *post-war* cycle is not merely a convenient indication of time.

There are important causal connections which link this period to the war; moreover, it cannot satisfactorily be described as merely the development of a business cycle.

Three features may be distinguished in the analysis of the period from the middle of 1919 (after the technical readjustments had taken place) to 1922. (i) Certain disproportions that developed during the war had prepared the ground for a post-war boom. This boom put into action again the United States business cycle mechanism, known before the war. (ii) Accordingly, the boom was followed in normal sequence by a cyclical downturn and depression. It would be incorrect, however, to attribute the depression, the first signs of which became apparent in the spring of 1920, wholly to the preceding boom. It was, in part, also due to (iii) a general drop in prices after the war which was to be expected in any case as the productive system was gradually brought back to pre-war efficiency.

The rise in prices during the war had originated in a change in demand and supply conditions for numerous commodities:

(a) There had been a very large increase of demand by Governments, which was only partially offset by decreased civilian consumption; this demand could only be met as higher prices called previously extra-marginal factors of production (land of lower quality, high cost mines, less qualified labour) into operation.

(b) On the supply side, the conditions of production and transportation had been worsened by the mobilization of the best part of the labour force, the lengthening of sea-routes, etc. This factor equally tended to raise prices.

After the Armistice, the reverse process could be expected sooner or later to come into operation. Demand was likely to decline, the decrease in Governments' demand not being completely offset by an increase in civilian demand,¹ and supply conditions were bound to improve. These adjustments are to be considered as important contributing causes of the 1920 price fall and the ensuing depression.

¹ In many European countries, Government expenditure went on at such a rate for many years after the war that the price-raising tendency arising from the demand side overtook the price-lowering tendency operating on the supply side. Cf. J. M. Keynes, "Tract on Monetary Reform."

3. *Factors making for a post-war boom: deferred demand and accumulated purchasing power.*

The measures of control imposed during the war, together with the decrease in the real income of the majority of consumers (except farmers), restricted non-military expenditure during the war. For most commodities, this decline cannot be observed from war-time production figures, since almost all industries were operating at full capacity turning out goods for army use. The spectacular decrease in the production of two important durable consumers goods, passenger motorcars and houses, may, however, be taken as a clear indication of the development of a backlog, to be made good after the war. (cf. Diagrams 2 and 5).

During the war demand could not be satisfied from current production; claims on future output consequently accumulated in the hands of both business-men and private persons. As the rate of interest was comparatively high, a large part of these claims was held in the form of war loans, rather than idle deposits. About 21 billion dollars of Liberty bonds were outstanding in 1919.¹ These bonds could be sold in the market at prices which, during 1919, were not or not far below par, the Treasury, with the help of a special fund, from time to time purchasing them to stabilize the market.² Moreover, the banks granted loans on Liberty bonds at approximately the coupon rate and on a small margin, and the Federal Reserve Banks were enabled till the end of 1919 to rediscount paper secured by war bonds up to the full face value of such bonds.³ In this way, Liberty bonds could be turned almost automatically into money.

This combination of deferred demand and accumulated savings made for the sudden revival of civilian purchase of various classes of goods in 1919, to which reference has already been made: motorcars, clothing, housing accommodation. Building activity was, however, arrested in the second half of the year by a very steep rise in building costs.⁴

In other countries, diversion of resources to war purposes had taken place on an even larger scale. European populations had been undernourished during the war, and part of their physical capital lost by actual destruction, lack of replacement and under-maintenance. It is true that in some of these countries there

¹ It is estimated that they were distributed as follows: individuals: 17 billions; corporations: 2½ billions; banks: 1½ billions. (National Bureau of Economic Research, "Income in the United States," vol. II, page 264.)

² Annual Report of Secretary of the Treasury, 1918/19, page 82.

³ *Federal Reserve Bulletin*, 1919, page 361.

⁴ See Section 8.

were no foreign assets to pay for the commodities so badly needed from abroad. But this did not prevent American exporters expecting a highly favourable market situation. It was assumed, indeed with some justice, that the purchasing power required to make demand effective would be furnished together with the goods in the form of (i) foreign credits such as had been granted by the United States Treasury since April 1917; or (ii) export credits granted by the banks; or (iii) long-time loans from the public at large, to be effected by large-scale marketing of European securities. But in the end, the expectations of certain groups of merchants in any case proved overoptimistic.

Hence both for the home and the export industries, it was thought likely that boom conditions would prevail after the abolition of war restrictions. These restrictions were in fact abolished promptly¹

4. *Continuation of war-time supply and demand conditions.*

Nevertheless, the boom arising from accumulated demand would never have developed if the factors making for the post-war price fall had not set in at the same time as decontrol. They did not do so, however. Conditions of both supply and demand remained in many ways similar to those obtaining during the war.

(A) *Supply.*

(1) The quantity of output and the level of productivity continued to be far below pre-war levels in the whole of Central and Eastern Europe, owing to losses of men and plant, diversion of machinery to war needs, loss of workmen's skill and physical strength, unsettled political conditions and a multitude of other factors. Hence prices of manufactured products in the United States could rise to high levels without giving rise to serious competition from the continent of Europe either on the home or on foreign markets.

¹ Cf. Annual Report of the Federal Reserve Board, 1919, page 69, quoted on page 16 below. Also: "The Agricultural Crisis and its Causes," Part II, page 42. The most powerful controlling agency, the War Industries Board, stopped its activity practically overnight on November 11th, 1918, and was dissolved on November 30th, 1918. (B. M. Baruch, "American Industry in the War," page 5; L. H. Haney, "Price Fixing in the United States during the War," *Political Science Quarterly*, 1919, pages 110, 448.)

(2) The world's transportation equipment, both railways and ships¹, worn out and partly destroyed during the war, could not be restored in a short time. Hence raw material prices in the United States could rise to high levels owing to lack of means for transporting stocks from overseas countries.

(B) *Demand.*

The monetary policy which the United States and most other countries followed during 1919 was a legacy of the war. It was still inflationary. Its main features may be summarized as follows:

(i) Military expenditure did not cease in November 1918. The troops were only brought back gradually, and many of the supplies ordered for the 1919 campaign could not be cancelled at short notice.

The difference between total Government expenditures and receipts affords a partial but useful indication of the inflationary influence of Government finance. The following table gives this deficit for the United States by quarters from her entry into the war:²

United States Government Deficit, 1917-1920
\$ (000,000's)

<i>Quarter</i>	<i>1917</i>	<i>1918</i>	<i>1919</i>	<i>1920</i>
I		2,900	2,876	+403*
II	648	1,500	1,467	+505*
III	1,932	4,025	770	+289*
IV	2,701	4,995	+154*	+170*

* Surplus.

It will be seen that, although the deficit was drastically cut after the end of the war (fourth quarter of 1918) it took a year before a small surplus could be shown.

¹ The world's tonnage was, in the middle of 1919, 2½ million tons higher than in 1914 (47.9 million as against 45.4 million). However, an unusually large proportion of these ships was under repair, their speed was low, the handling in the ports was inefficient owing to lack of railway cars, labour troubles, etc., and, finally, there was a heavy demand for tonnage for the provision of Europe with foodstuffs and raw materials and for the repatriation of troops. The inadequacy of supply is evident from the high freight rates which were maintained till the spring of 1920.

² Annual Report of the Secretary of the Treasury 1920/21, page 241. Figures include loans to foreign Governments.

(ii) During the period of the United States participation in the war, the heavy deficits of the Federal Government had to a large extent been compensated by a reduction in civilian spending. This caused both the rise in prices and the extension of credit to be relatively moderate. After the Armistice, the legal and moral restrictions fell away; the borrowing of the Government was no longer met by private saving,¹ and there occurred a considerable expansion of credit, as may be seen from the following figures:

Banking Statistics. All Banks in the United States.
(billions of dollars)

Year	Individual deposits	Loans and Discounts				Investments	
		Total	secured by			Total	U.S. Government paper
			land and real estate	stocks and bonds	other collateral and no collateral		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Outstanding June 30th							
1914	18.5	15.3	3.5	4.7	7.1	5.6	0.8
1915	19.1	15.7	3.8	4.1	7.8	5.9	0.8
1916	22.8	18.0	3.4	4.7	10.0	6.8	0.7
1917	26.3	20.6	3.7	4.6	12.4	8.0	1.0
1918	27.8	22.5	3.1	4.6	14.8	9.7	2.6
1919	33.1	25.0	2.4	6.6	16.0	12.2	4.2
1920	37.7	30.8	2.6	6.7	21.5	11.4	3.3
1921	35.5	28.7	4.8	6.2	17.8	11.4	3.9
Increase over preceding year							
1915	0.6	0.4	0.3	-0.6	0.7	0.3	0.0
1916	3.7	2.3	-0.4	0.6	2.2	0.9	0.0
1917	3.5	2.6	0.3	-0.1	2.4	1.2	0.3
1918	1.5	1.9	-0.6	0.0	2.4	1.7	1.6
1919	5.3	2.5	-0.7	2.0	1.2	2.5	1.6
1920	4.6	5.8	0.2	0.1	5.5	-0.8	-0.9
-1921	-2.2	-2.1	2.2	-0.5	-3.7	0.0	0.6

NOTE: The classification of loans in columns (4) and (5) is based on returns for the National Banks. For banks other than national the classification of loans given in the returns is slightly different. For these banks "loans secured by collateral other than land and real estate" have been entered in (4); "loans not secured by collateral and unclassified loans" in (5).

SOURCE: Report of the Comptroller of the Currency.

¹ Cf. on the war period; B. M. Anderson, "Effects of the War on Money, Credit and Banking in France and the United States" (New York, 1919), page 185; on the situation immediately afterwards, the Annual Report of the Federal Reserve Board for 1919 may be quoted:

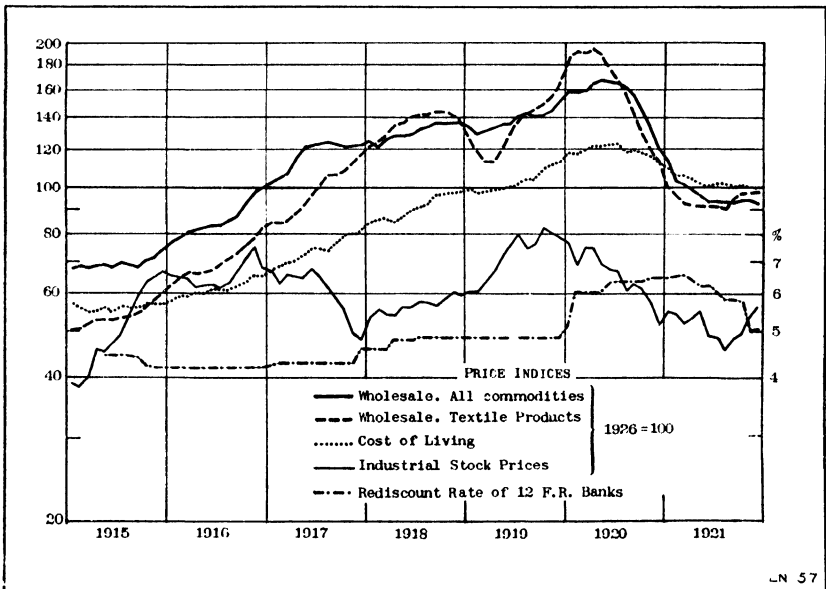
"Although the period of war financing did not terminate with the year 1918, and the Federal Reserve System was consequently under the continued strain of war finance, that strain had to be met without the aid of war restrictions. The safeguard afforded by these restrictions was removed. . . . There is no longer an embargo on exports of gold, nor any regulation or control of foreign exchange . . . ; the controls set up over exports and imports, production and consumption, with a view to conserving the national resources and reducing waste, have practically disappeared. As a result the problems of the Federal Reserve System have been greatly increased . . ." (page 69).

The largest increases of deposits were from 1918 to 1919 and from 1919 to 1920; in 1919 the banks continued to absorb Government paper on a large scale (1.6 billion dollars) and in 1920 they increased their loans and discounts by 5.8 billion dollars. This increase, which exceeded the rise in deposits by 1.2 billion dollars, was in part compensated by the liquidation of Government obligations to an amount of 900 million dollars.

(iii) The rediscount rate of the Federal Reserve Banks was kept constant from the middle of 1918 till November 1919. It was admitted that sound banking policy alone would have required a rise in interest rates as soon as boom conditions became apparent, but the reverse policy had to be adopted to enable the Treasury to float the Victory loan at a lower interest rate than it could otherwise have done.

(iv) During 1919, the United States Treasury advanced over \$2,000,000,000 to foreign governments for purchases in the United States¹ (\$3,370,000,000 in 1918).² In this way the Government helped to keep export conditions and expectations lively.

Diagram 4—Price Indices, 1915-1921



¹ *Review of Economic Statistics*, 1920, Suppl., page 13. Moreover, financial assistance of \$1,500,000,000 was given by the Treasury in the same year by the purchase of foreign currency, the sale of supplies on credit, and delays granted for interest payments.

² *Review of Economic Statistics*, 1919, page 247.

To sum up, supply and demand conditions combined to postpone the post-war price fall until after 1919. Boom conditions could prevail for some time unchecked.

5. *The mechanism of the post-war boom.*

The outstanding characteristic of the 1919 boom was the sharp rise in prices and the intensity of commodity speculation. The mechanism to be analysed is essentially one of a speculative boom in commodities under conditions in which production could not be considerably expanded in a short time. Diagram 4 shows the accompanying price movements.¹

The rise in prices, once started by the recovery and by the termination of Government controls,² became itself an impelling factor of the upswing. It led to:

(a) anticipation of further rises, in consequence of which

(i) producers and traders were willing to increase their stocks for motives ranging from cautious covering for a known future demand to pure speculation;

(ii) consumers bought as much as possible in anticipation of future needs, for fear of having to pay higher prices a few months ahead;

(b) a revaluation of commodity stocks (and other assets), causing windfall profits;

(c) the capitalization of higher returns on property considered as a lasting phenomenon, in particular as regards the value of land. Land changed hands quickly, and as the high prices were

¹ Price indices give a somewhat distorted picture of both the pattern and the intensity of price movements during this period, in particular for raw materials. As the pattern of a steep rise followed by a steep fall shown by many individual price series did not occur for all at the same time, the average index gives the erroneous picture of a slow and moderate rise, and similarly does not fully bring out the steepness of the fall. The effect of this averaging will be seen from the following figures, where "I" indicates the percentage fall (or rise) of the price index from the highest (lowest) month in the first year to the lowest (highest) month in the subsequent year, and "A" indicates the average of the percentage fall (or rise) of the individual price series measured for each series between the extreme monthly values of that particular series in two successive years. It will be observed that though the price indices indicate a relative rise of prices of raw materials less than that of finished goods in the 1919-20 boom, raw materials prices actually rose, on the average, appreciably more than the prices of finished goods.

	<i>Fall</i>		<i>Rise</i>		<i>Fall</i>	
<i>Commodity Group</i>	<i>1918-1919</i>		<i>1919-1920</i>		<i>1920-1921</i>	
	<i>I</i>	<i>A</i>	<i>I</i>	<i>A</i>	<i>I</i>	<i>A</i>
Raw Materials	5	39	22	67	51	63
Finished Goods	5	25	28	53	41	48

² J. M. Clark, *op. cit.*, page 57; see also Section 11.

often largely paid out of mortgage money obtained from the banks¹ these transfers resulted in a net increase of purchasing power in the hands of the public.

We shall refer to demand due to any of these three causes as "speculative demand."

The higher prices implied, in the first instance, a fall in real incomes. Wage earners, by making free use of the strike weapon, largely succeeded in getting their money incomes increased proportionately with the rise in prices during the upswing—thereby accentuating the upward course of prices. Incomes derived from salaries, interest and dividends did not, however, increase considerably, and fell in real terms. The group of consumers affected therefore were induced to curtail their consumption.

6. *The mechanism of the cyclical downturn.*

The situation on the market for consumers goods, as outlined in the preceding section, was essentially unsound. For (a) the rise in prices made for a decline in the amount of consumption goods which the earners of stable money incomes could buy. But (b) speculative demand, due to this very rise, sustained the market and tended to counteract part of the tendency to a fall created by (a).

Under such conditions, for aggregate demand not to drop, speculative demand must take up an ever increasing part of total output to fill the gap of shrinking regular demand. To induce speculators to do this, prices must continue to rise. Evidently, this process can go on only for a short period of time. The decline in regular demand and the accumulation of stocks undermine the basis for speculation. There are limits to the amount of credit the banking system, however elastic, can put at the market's disposal for speculative, or quasi-speculative, purposes. The high prices will eventually stimulate production. If production could have responded immediately, the price rise would of course not have been possible; in the 1919 state of approximately full employment of resources, however, an expansion of production and, especially, an attraction of raw materials from far away countries, was possible only after a considerable lapse of time.

¹ It is reported as a regular procedure in 1919 for the buyer to pay down 5%, 75% being taken as a first mortgage from a bank and 20% as a second mortgage by the seller. (Cf. Bonner, "Credit Aspects of the Agricultural Depression," *Journ. Pol. Econ.* 1925, page 98.)

The exceptionally large 1920 crops constituted, to some extent, such a delayed increase in supply in response to the rise in prices—though they were mainly due to accidentally high yields. Although the acreage under cereals in 1920 was 10% above the 1909-1913 average, there was only one year in the 1915-1923 period (1916) in which the increase over the pre-war period was less. But a yield of 10% over 1909-1913 made the 1920 cereals crop one of the largest in history which, coming on a faltering market, contributed to the steepness of the fall in cereal prices.

It is clear that a market, carried away by speculation, must collapse as soon as prices stop rising—if not when the rate of increase of the rise slows down. When prices no longer rise, speculative demand falls away. But real incomes remain stable at a low level, and hence regular demand does not increase. So the aggregate volume of demand from both sources diminishes, and the boom breaks.

This analysis shows the inherent instability of such a boom. It gives no clue as to the precise moment when, and the precise reason for which the eventual breakdown will come. The further the upward movement develops, the more “ceilings” emerge. It is to some extent a matter of chance which of these will be touched.

Once the peak is passed the same mechanism works in the opposite direction. In anticipation of a price fall, people stop buying and let stocks run down. The capitalized value of land shrinks with the fall in the price of its products; these capital losses induce the consumers to restrict their expenditure.

The “buyers’ strike” which during the boom was the expression of the inability to pay the high prices, especially of the middle classes, now assumes another aspect. Buyers who could not buy at the high prices become unwilling to buy at the lower prices—in anticipation of still lower prices. So this strike—though not the cause of the downturn—is a powerful factor in accentuating the downward process.

7. *An example of the mechanism: silk.*

Speculation in silk was lively. Records of the time quote as an outstanding example of extravagance the “silk shirts” of certain favoured classes of labour (munitions workers, shipyard workers). This may have been the initial reason why expectations in the silk market were so high. Soon, moreover, the market itself witnessed huge speculative gains. The price of raw silk showed the following jumps, resulting in a rise of 180% in nine months:

	(\$ per lb.)		
Pre-war	3.50-4.00	November 1919	12.37
March 1919	6.06	December 1919	13.63
October 1919	11.06	January 1920	16.98

No stock figures are available for the period before 1920, but in January of that year, stocks were at a record level, not touched again until November 1929.

On the other hand, clothing is one of the compressible items of expenditure, and great economies on it were reported on the part of people whose real incomes had fallen.¹

It is clear that, during the period of the steep price rise, the silk market was in a highly unstable condition. Opinions do not agree as to whether the actual break was due to the boom's own top-heaviness or to a general price collapse in Japan.² The matter is not of great importance; the break was bound to come eventually in one way or another. After the downturn, prices fell even more rapidly than they had risen; in six months they came down from \$17 to \$4.60 a lb. in July 1920. In the same month, silk "deliveries" were only 36% of what they had been in February of that year.

Another instance of speculative anticipation of demand may be mentioned. The sanguine expectations of export possibilities to Europe and the optimism with respect to Europe's ability to pay resulted in the "piling up of a wall of lard and a mountain of bacon, hams, and other products in the neutral countries and on the frontier of Germany and other central European states long before these countries were actually opened to trade."³ Many of these stocks proved unsaleable, many tons of food deteriorated in storage; and much was actually shipped back to the United States.

8. *The production of durable goods.*

During the boom, brisk demand for consumers goods, both perishable and of medium durability (such as automobiles), sent prices soaring. In such a situation, one may expect productive resources to be shifted from the production of goods of long durability into the production of less durable goods, particularly if

¹ It may be noted, moreover, that during the same period prices of rayon increased only by 33%, making the switch over from silk to rayon relatively attractive to consumers.

² In Japan, a speculative boom similar to that in the United States had developed. Cf. *Review of Economic Statistics*, 1920, pages 94/5 and page 233.

³ E. G. Nourse, "American Agriculture and the European Market," page 69.

the boom is expected to last only for a short period so that would-be purchasers of commodities of long durability may expect to buy at lower prices if they postpone their demand till the boom is over.

The 1919 boom, though it was of course affected by a great many special factors, tends to confirm this theoretical pattern. True, the production of machinery did not fail to revive, nor did it turn down early in 1920. The employment index for the machinery industry, as shown in Diagram 3, shows a pronounced rise from the middle of 1919 and remain at a high level till July 1920. But in the figures for construction and railway equipment orders, the decline in these forms of investment¹ owing to the rise in prices and wages is very clear.²

(i) *Construction.*

Diagram 5 gives the movements of residential and other construction contracts, in millions of square feet. Both show a very rapid recovery from the low war levels. But this movement was of short duration only. Residential building shows a sharp turning point as early as the middle of 1919, and other construction also turns before the end of the year. Throughout 1920, the course of both series is steeply downward, giving way to a sudden revival early in 1921. It would seem to follow from a comparison of these series with the index of construction costs, shown at the bottom of the Diagram, that the violent fluctuations in construction are to be attributed to a large extent to the movements of construction costs. It will be observed that the two turning points in residential building follow those in the cost series with a lag of three months in 1919 and of about six months at the end of 1920. The lag would be rather longer for other types of construction for which the preparation of plans takes more time.

¹The railways and residential (but not industrial) construction represent to some extent a special case, in view of the legal restrictions on rates and rentals, which prevented the immediate adjustment of "selling prices" to changes in costs.

²In this connection, it is interesting to examine the series for new orders for durable and semi-durable commodities compiled by the Institute of Applied Econometrics. Orders for durable goods show two peaks of equal height, separated by a shallow dip of probably little significance, in July 1919 and January 1920, and from then on decline sharply. Orders for semi-durable goods, on the other hand, (which show far less violent fluctuations) do not reach their peak value until June 1920.

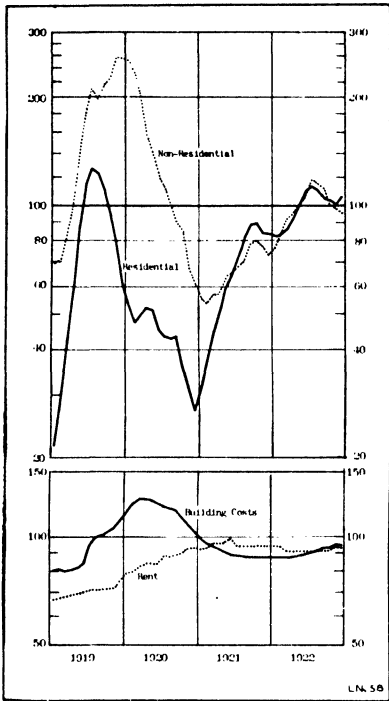


Diagram 5
Construction Indices

1922 = 100

Index of Building Costs,
Index of Rent

1923-5 = 100

Though the movement of costs probably explains¹ the sharp decline of building in the middle of the boom, and the rapid revival (almost as steep as early in 1919) in the middle of the depression, it does not, of course, account for all the fluctuations. The continual increase in construction activity throughout 1922, when prices were stable and even tended to rise again, may well be due to the fall in interest rates and the rise in national income. The considerable increase in rents after the war

was also, no doubt, a powerful factor in stimulating residential building.

(ii) *Railroads.*²

The railroads were operated by the Government from January 1st, 1918, to March 1st, 1920. Various factors contributed to make demand for railroad equipment abnormally small during the first three years after the war. During 1919, neither the Railroad Administration nor the companies made investments of any consequence in view of the uncertainty concerning the further duration of government operation. During 1919 and the first eight months of 1920, low rates combined with high wages made for a very low level of profit, which was not conducive to increasing capacity. Considerable orders were placed only in the period

¹ It will be observed that construction fluctuates much more than construction costs. The figures would indicate an elasticity of demand in the order of 2 for residential construction.

² Cf. W. D. Hines, "War History of American Railroads."

Railway Indices
1915 = 100

	1915	1916	1917	1918	1919	1920				1921				1922	1923
						I	II	III	IV	I	II	III	IV		
1. Rates	100	100	100	114 ^a	125 ^b	125 ^b	125 ^b	125 ^b	165	165	165	165	150	150	
2. Hourly wages	100 ^c	106	120	177	213	225	234	268	268	267	240	240	237	236	
3. Rates as a % of hourly wages	100	94	83	64	59	56	49	47	61	62	62	69	63	64	
4. Freight ton miles	100	132	144	148	132	149				112			123	150	
5. Net revenue from operations	100	146	139	105	87	41				134			134	164	
6. Equipment ordered: freight cars ^f	100	155	12	104	20	58	142	69	36	15	7	2	62	164	
7. Equipment ordered: passenger cars ^f	100	116	57	1	15	120	160	58	22	6	8	6	30	120	
8. Equipment ordered: locomotives ^f	100	180	168	161	13	160	202	75	57	11	15	3	30	161	

^a 100 during first 5 months and 125 during last 7 months.

^b Weighted average: freight 128, passengers 118.

^c Till September 1, 1920.

^d From September 1, 1920.

^e Fiscal year 1915/16

^f Annual equivalents of quarterly figures in 1920 and 1921.

Sources: Hines, *op cit.*; Clark, *op. cit.*; Standard Statistics; Statistical Abstract of the United States.

when government operation was terminated. By the end of 1920, what was probably a workable relation of rates to wages had been restored. But the reduction in the value of transportation caused by the depression resulted again in a very low level of equipment purchases during 1921. In that year, however, considerable economies were effected, including a reduction of personnel by 18%. With the recovery in business, the railroads finally reached a moderate degree of profitability in 1922, and it was only then that, after a three years' interruption, considerable orders for equipment were placed.

9. *The post-war price fall.*

About the same time as the speculative boom broke down, a more general post-war price fall due to other causes began. One after the other the war conditions which, as we saw, still prevailed in 1919 disappeared. Only the most important need be enumerated.

(i) *Deflationary policy of the Federal Reserve Banks.*

Many statements by the Federal Reserve Board¹ show that this body desired to keep the boom in check by means of monetary policy. Not before the war-financing was over—at the end of 1919—however, could the desired policy be carried out. Rates were raised steeply at the beginning of 1920 and again in June.²

It was hoped that discount policy would check further expansion without producing “radical and drastic deflation.”³ The Federal Reserve Board foresaw, on the other hand, that speculation could hardly be deterred by any “reasonable advance in rates of interest.”³ Retrospectively, the rate increases were termed “precautionary steps which did not produce deflation but checked the expansion.”⁴ It is probable that the monetary policy had some effect towards checking the expansion, which, however, would have come to an end in any case. Once expansion was stopped, a process of liquidation was inevitable.

In this liquidation, banking policy played an active role.⁵ In order to maintain the strength of the Federal Reserve system,

¹ Quoted by H. W. Macrosty, “Inflation and Deflation in the U. S. and the U. K., 1919-1923.” *Journ. Royal Stat. Soc.* 1927, page 45.

² There are no traces of a deliberate open-market policy prior to 1922.

³ Annual Report, 1919.

⁴ Annual Report, 1920.

⁵ It will be observed that the average Federal Reserve Banks' discount rate rose till March 1921, when it reached 6½% (Diagram 4).

there was a tendency on the part of the Federal Reserve Board to restrict advances against unsold goods¹ which tended to aggravate (though perhaps also to shorten) the depression, particularly in agriculture.²

(ii) *Decline in exports.*

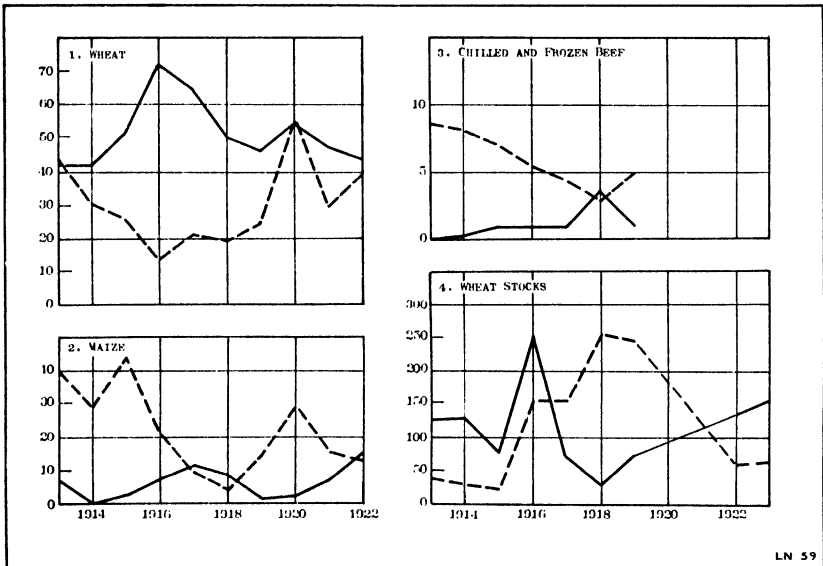
The enormous increase in United States exports during the war had to a large extent been caused by a diversion of European demand from the other suppliers (Australia, Argentine, etc.) to the United States because of:

- (a) lack of tonnage and high freight rates;
- (b) convenience (to have only one sea route to convoy);
- (c) credits granted by the United States Treasury.

Diagram 6 shows, for a few important commodities, how, after the war, United Kingdom importers switched back to the pre-war countries of supply.

Diagram 6—The Diversion of European Demand

— United States^a - - - - Other Major Exporters^b
 1-3. Imports into the United Kingdom in cwts. (000,000's)
 4. Wheat Stocks on August 1, in bushels (000,000's)^c



^a In 4: United States and Canada.

^b Argentine (1-4), Australia (1, 3, 4), India (1), New Zealand (3).

^c The first figure indicated for both curves refers to the 1909-1913 average.

¹ Annual Report, 1920.

² This action was criticized in the Report of the Joint Commission of Agricultural Inquiry (Vol. II, page 14).

Stocks had accumulated in the countries that were economically too far away from Europe, partly because demand was shifted to the United States and Canada (wheat), partly because imports were reduced (wool). Comprehensive statistics of surplus stocks during the World War do not exist. Diagram 6 gives the development of wheat stocks in some of the major producing countries. Indication is further available of the accumulation during the war of surplus stocks of¹

wool —in Australia, New Zealand, South Africa, the Argentine and Brazil;
 tin —in Malaya, the Netherlands Indies and Bolivia;
 lead and zinc —in Australia;
 rubber —in Singapore and other Far Eastern ports;
 nitrates —in Chile.

At the end of February 1920, the freight market broke² and so not only reduced the advantage of the United States, but also caused the European markets to be glutted with the accumulated stocks. About the same time, on January 28th, 1920, the Secretary of the Treasury declared that "the Treasury [was] opposed to further Governmental aid" abroad (with some minor exceptions), and that "the governments of the world must now get out of banking and trade."³ Though an extension of export credits was urged upon the banks from many sides, they did not, in fact, increase sufficiently to offset the decline in government credits.⁴

Thus the artificial conditions that the war had created on the market for export goods had come to an end; exports and export

¹ London and Cambridge Economic Service, *Special Memorandum*, No. 1, and J. W. F. Rowe, "Markets and Men".

² This break was due to an increased supply of tonnage which was called forth by these high freight rates and continued to pour into the market a considerable time after rates had started to fall.

³ *Review of Economic Statistics*, 1920, Suppl., page 13.

⁴ Cf. the following figures for capital exports from the United States (*Fed. Res. Bull.*, November 1921):

	1919	1920	1921
	nine months		
	(\$'000,000,000's)		
U. S. Gov't international payments	2.4	.3	—
Investment, private, abroad	.3	.3	.3
Repatriation of U. S. securities	.1	.1	—
Unfunded credits (residual item of the balance of payments)	1.4	1.7	.5
Total	4.2	2.4	.8

prices had to fall; "it is something of a puzzle why prices held up as long as they did."¹

It is difficult to determine, for any particular agricultural commodity, to what extent the price fall was due to decline in foreign demand.² For many products, indeed, the volume of exports remained high. This only shows the basically weak position of the exporter. Diminishing demand and cheapening supply from other countries had undermined high prices. When this situation became evident—through a fall in price, or some decline in exports, or a growing realization of the lack of purchasing power in Europe—the "sellers' market" became a "buyers' market."

(iii) *Railway conditions.*

The railway situation had been bad during the severe winter of 1920; it deteriorated into an outright transportation crisis in April of that year, owing to a large strike of railwaymen. The transport problem formed an additional factor (apart from the speculative motive) in favour of holding large stocks:

(a) producers and dealers were anxious to enlarge their stocks of raw materials and finished commodities to ensure smooth production and sales in spite of slow and uncertain supplies;

(b) sellers in many cases could not dispose of their stocks for lack of transport; hence stocks piled up in agricultural districts.³

The effects of this accumulation of stocks were twofold:

(a) the resulting additional demand tended to raise prices;

(b) the stocks constituted a potential danger to prices and production as soon as traffic became normal and the two parties concerned could use up their surplus stocks or throw them on the market.⁴

(iv) *The decrease in the Government deficit.* See Section 4.

(v) *The abolition of the Government minimum price for wheat.* on June 11th, 1920, has "generally" been regarded as the reason for the decline in wheat prices.⁵ It at any rate made such a fall possible.

¹ Nourse, *op. cit.*, page 73.

² This question was studied at some length by the Joint Commission of Agricultural Inquiry; the Commission's Report does not, however, provide a conclusive answer to the question.

³ It is reported that, in some districts, two crops were held at the time.

⁴ The situation is wholly comparable with that of sea transportation, referred to under (ii).

⁵ Mentioned in the Annual Report of the Federal Reserve Board, 1920, page 8. It would seem from the text that the Board does not wholly agree with this opinion.

10. *The course of the depression.*

The joint action of a cyclical downturn and the post-war price fall resulted in an extraordinarily sudden decline in business activity. In a few months (August 1920 to January 1921) production and employment fell by 25%. Prices and wage rates also went down precipitously, wholesale prices stopping at about 40% and the cost of living and wage rates at 80/90% above the 1914 level. A downward business cycle movement had begun, the effects of which were quickly felt in other countries where the same process of speculative inflation had been going on; this, in turn, had an unfavourable though somewhat delayed influence on American exports.¹

The downswing, then, was unusually rapid, but it was short. By the end of 1920, the worst was passed. But the revival was slow and the whole year 1921 was, in general, one of stagnation. By the end of the year, factory employment and production were only a few percent higher than in December 1920. (Cf. Diagram 1.) It will be noted that in the process of recovery, as in the preceding downturn, the output of non-durable goods led that of durable goods, and durable and semi-durable consumers goods led durable producers goods. Diagram 1 shows a sharp reversal in the trend of the output of non-durables as early as December 1920, whereas durables reached their lowest point in July 1921. The employment figures from Diagram 3 bear out the same facts. Of the six series representing employment in consumers goods industries, five have their turning point in January 1921 and one, men's ready-made clothing, in the previous month. With the exception of the motor car industry, where, after an initial rise, employment remained from April 1921 to March 1922 almost stable at a low level,² the rise in the consumers goods industries was considerable. The December 1921 figure was, in all cases, more than 20% in excess of that of January of the same year, bringing employment to a level of only 10 to 15% below the 1920 peak. On the other hand, employment in the iron and steel industry rose only after July 1922, and in machinery production only after November 1922.

¹ Cf. *Review of Economic Statistics*, 1921, page 8. It is known that the execution of the old export orders kept certain industries well employed for a short period after domestic demand had fallen off; there is little evidence of this, however, in the general export statistics.

² Within the automobile industry, passenger cars make a better showing than trucks. In 1921, the output of the former is 75% of the 1920 level, of the latter, 48%.

After the temporary reduction of activity required to liquidate redundant inventories, industry recovered thanks to a large backlog of demand for plant and equipment and a rapid expansion in the production of a few durable consumers goods, such as motor-cars and radios. In the case of agriculture, there were no such favourable factors on the demand side, nor could supply be easily reduced from the high levels to which it had expanded during the war. These differences largely account for the contrast between the state of chronic semi-depression in agriculture and the high level of prosperity in the rest of the economy. Furthermore, the disturbed condition of European currencies affected demand for export unfavourably, once the period of relief credits was passed. Debts incurred at high prices implied a heavy service in real terms, which weakened the farmers' financial power. Consequently, agricultural prices fell much deeper than industrial prices, and remained lower.

*Indices of Prices Received by Farmers and Paid by Farmers
1910-1914 = 100*

	<i>Prices received paid</i>			<i>Prices received paid</i>	
1910-1914	100	100	1920	211	201
1915	98	105	1921	125	152
1916	118	124	1922-1924	139	151
1917	175	149	1925	156	157
1918	202	176	1926-1929	144	154
1919	213	202			

11. *Consideration of policy.*

The acute crisis which the United States economy underwent in the middle of 1920 was due to the joint influence of two principal factors: the reaction following upon a speculative post-war boom, and the post-war price fall resulting from the reduction in Government demand and the re-establishment of pre-war efficiency in production and transportation. The question naturally arises whether, by appropriate measures of economic policy, this crisis could have been prevented or mitigated.

In countries that have not been too seriously damaged or impoverished by the war a post-war boom is always likely to develop, owing to the sudden unleashing of civilian demand. In the United States it developed into a price boom, and the first obvious conclusion is that, if price and other controls had been

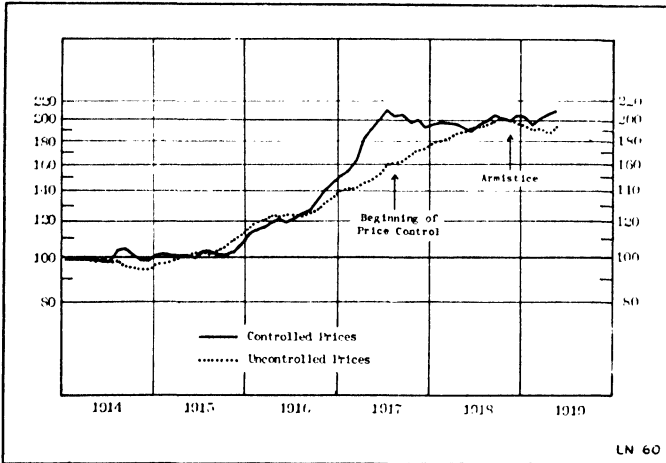
maintained, the sudden flare and collapse might have been avoided. But in fact no such simple solution presented itself. At the time of transition from war to peace economy the conditions of supply may remain at first largely unchanged. This fact alone would seem to justify a continuance of price control, of rationing of raw materials, etc. But the conditions of demand radically change, for the overwhelming war demand of one buyer, the State, is replaced by the infinitely varied and unknown demands of the civilian population. The State can control prices right up to the finished articles it buys, but to control the prices of all the innumerable commodities made for the public in peace time is a different matter; and if the State confined itself to controlling the prices of raw materials and rationing their supply, while leaving finished goods free, this might have as its major result an increase in the profits of the manufacturer and little reduction in cost to the consumer. A continuance of post-war price control, therefore, cannot be accepted as a simple or obvious or complete solution of the difficulty. It is none of these things. Nevertheless the continuance of some measure of control might have proved useful especially as regards foodstuffs and possibly some articles of clothing. Speculative fluctuations in raw material prices, moreover, may be due not so much to a present shortage as to the expectation of a rise in price in the future. Price control of raw materials, provided it is clear that it will be continued as long as the tendencies to a speculative boom last, may dispel such expectations and may to that extent not merely moderate the effects of the boom but actually attack its cause. A beneficial effect of continued control was certainly expected by the Chairman of the War Industries Board, who wrote: "If the proper authority would have been at hand, it would have been possible for the War Industries Board to have continued its functions during the period of readjustment. Much good could have been accomplished. But with the signing of the Armistice, the purchases of the Allies and our great departments coming to an end, the power of the Board, without further additional legislative authority, ceased and it was possible to do only what was done—to wind up its work as quickly as possible."¹

It is at least clear that during the war this Board was successful in the exercise of its control, as is illustrated by Diagram 7 comparing the Board's indices of "uncontrolled" and "controlled" prices—the latter being the prices of commodities that were subject to control during America's participation in the war, or dur-

¹ Bernard M. Baruch, *op. cit.*, page 8.

ing a part of this period.¹ This diagram could not, unfortunately, be extended beyond May 1919; but even for the short post-war period covered it provides pertinent indications.

Diagram 7—Controlled and Uncontrolled Prices
1913 = 100



There is no significant difference in the movement of the two series up to the middle of 1916. From then until control was introduced in July 1917 the one group of prices ran away, while the prices which it was not considered necessary to control rose at a very regular rate from the middle of 1915 to the end of 1918. The gap between the two curves disappears about 10 months after the control was introduced. From then on, the two series almost coincided. Finally, after the Armistice and the

¹ Cf. P. W. Garrett, "Government Control over Prices," page 427. This index ends with December 1918, but is here continued with a similar index based on the Bureau of Labor Statistics price indices (*ibidem*, page 413). The series are linked by using their 1918 yearly averages.

The indices, which are weighted, are based on the prices of 1366 commodities, 573 controlled and 793 uncontrolled. There is a tendency for the controlled group to contain more raw materials and less finished commodities than the uncontrolled group—but there are many exceptions. The class "Wheat and Wheat Products," e.g., was entirely under control: from wheat to crackers. Tea, cocoa and tobacco were free, coffee controlled. Raw cotton and important cotton manufactures were free, but cotton yarns were all under control. Of wool, on the other hand, only the raw material price was controlled. Of the 88 iron and steel manufactures, 36 (among which, steel rails) were controlled.

The indices, in particular that of controlled prices, reflect, of course, the same averaging out of sharp individual fluctuations mentioned earlier in connection with the index of raw material prices.

sudden cessation of control, the formerly controlled prices immediately resumed the tendency to a speculative rise. By May, 1919, the difference between the two series was some 10%; a price boom similar to that of 1916 had started.¹

This rise in prices might have been checked by a better understanding of the factors at play. The information was available, but was misread.

The prices of farm products, for instance, were expected to remain at the high levels reached, or to rise even further. But it should have been clear that the high prices were due to the coexistence of two essentially temporary conditions: exports to Europe financed by United States Treasury credits, and the blocking of stocks in East Asia, Oceania and South America. With respect to many metals the situation was to some extent similar. There was no lack of statistical information about the movement of prices both in the United States and in other countries.² But perhaps partly owing to defective statistics of stocks, interpretations went astray. More complete information concerning all factors influencing markets might possibly have checked the boom; but it is doubtful whether it could have prevented it altogether.

Fuller information and a wiser interpretation of the information available would have contributed something; direct price control of at least certain classes of raw materials known to be liable to speculative movements, even if such control gave rise to increased industrial profits, might have further contributed to stability. But the Government had an instrument of control ready to hand which, efficiently used, might have gone far to check the price boom and the windfall profits. That instrument was its ownership of surplus stocks—valued at some \$2,600,000,000—of raw materials, semi-manufactured goods and even manufactured goods. It was not employed. On the contrary, the Government, in liquidating these stocks, seems to have been much more concerned not to precipitate a slump than to check a boom. A policy was adopted of selling all commodities through the medium of the industries which had produced them (though later on, when the transition period seemed safely passed, direct

¹ The danger of this development was apparently realised by the Government at an early date, and in March 1919 the Industrial Conference Board was created "to meet with the representatives of industry and determine with them 'fair prices' for the basic raw materials." The Board, however, lacked authority and its members resigned two months later. (*Cf. Garrett, op. cit., page 413/4.*)

² *Cf. the detailed studies of the War Industries Board and the Federal Reserve Board.*

sales of some commodities were made to consumers).¹ The policy worked well in the first half of 1919; but it would seem to have had the disadvantage of depriving the Government of the power to curb a rapid rise in the prices of the commodities which it had in store.² Thus it was stated that the lumber industry would have been "paralysed" if all stocks had been disposed of immediately. "Under the agreement the surplus was all sold without disturbance to the industry."² But prices of American lumber rose some 125 to 200% between April 1919 and April 1920. Copper prices rose by nearly 50% between March and August 1919 (and fell again afterwards) in spite of the fact that at the beginning of 1919 the United States Government possessed 100,000 long tons of copper,³ a quantity equal to one-fourth of the total consumption in the United States in 1919.⁴

Not only was the Government failing to check a price rise: it was actually promoting such a rise through deficit financing. The influence of the deficits, which themselves were perhaps unavoidable, might have been minimized had the monies required by the Government been obtained to a greater extent by a reduction of private consumption and not, directly or indirectly, by credit expansion. There, however, the monetary authorities were faced with great difficulties. The art of Federal Reserve open market operations was at that date quite undeveloped and the most important available instrument to prevent credit inflation was the discount rate. But a rise in the official rates would have affected the whole structure of interest rates. A high yield on Government bonds would either have postponed the funding of the large floating debt, or would have made it very burdensome to future budgets. Both possibilities were undesirable. On these grounds, short term rates were kept low till the end of 1919.

The unstable conditions created by the 1919/20 boom should not divert attention from the fact that, even without a boom, the price and income structure of the middle of 1919 could not have continued in a peace economy. A fall in prices (or a rise in money incomes) was to be expected as real costs fell owing to the re-establishment of normal conditions of production. Such a *relative* price fall is inevitable and indeed desirable.

¹ Cf. B. Crowell and R. F. Wilson, "Demobilisation," New Haven, 1921, pages 269ff.

² *Idem*, page 273.

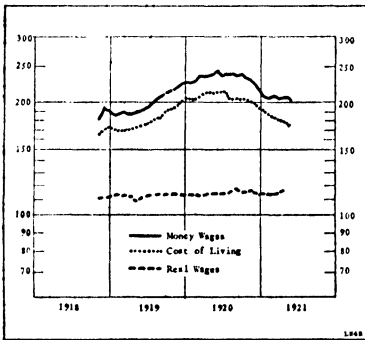
³ London and Cambridge Economic Service, *Special Memorandum*, No. 1.

⁴ At that time all Allied Governments together held about 650,000 tons of copper, equivalent to two-thirds of one year's world consumption.

The price fall which actually occurred in the United States in 1920/21 went beyond the point required to raise real incomes in accordance with the reduction in real costs. As is well known from the swings of the business cycle, the very movement towards a certain level produces the momentum which pulls the whole structure past what, a short time ago, would have been a possible position of equilibrium.

This process of concurrent changes in prices and costs may be seen from the movements of the cost of living and money wage rates over the two years from the end of the war to the middle of 1921. Diagram 8 shows the monthly movement of both series, and the resultant series of real wage rates. (For the last, three months moving averages are plotted to eliminate erratic month-to-month fluctuations.) The 20% decline in money wages did not, in fact, depress real wages. But it had no doubt a depressing influence on entrepreneurs, who could reasonably expect that by waiting a few months they would be able to produce at lower money wage rates.

Diagram 8—Real Wages
1914 = 100



In the downward movement, as in the 1919 boom, speculation played a large role. Prices fell largely because they were expected to fall. For that reason (and partly because the fall in prices reduced the value of the collateral of loans) stocks of raw materials, foodstuffs and finished products were thrown on the market and livestock was slaughtered in large numbers.

Given these expectations, the initial price fall degenerated into a joint fall of prices and incomes which lasted till about the end of 1921. Just as a speculative rise of prices can be checked by a firm policy of price control, such a speculative price fall might conceivably have been arrested by a declaration of monetary policy and by determined action in accordance with that policy, in order to prevent speculation from anticipating ever lower prices.

If a policy of price stabilization at a high level had been adopted, two sets of measures would seem to have been indicated.

1. At the end of a war very appreciable changes in relative wages, as in relative prices, are to be expected and are indeed desirable. But if a protracted process of deflation is to be avoided wage rates on the average should be kept stable.

2. At the same time it would have been necessary to take the appropriate measures to maintain or increase the national income as soon as the essential adjustments of values had been effected. One of such measures would have been a lowering of the discount rate. (In 1921 it was raised when the worst of the crisis was already past.) If, in such circumstances, private investment does not react with sufficient rapidity or strength, Governments may have to embark on a programme of temporary deficit spending as soon as they consider that a further fall of prices serves no useful purpose, by an extension of public works,¹ the payment of war bonuses or the release of savings.

12. *Summary of findings.*

(1) Readjustment from war to peace production was accomplished very quickly after the Armistice; employment declined only very slightly for a few months, after which it recovered rapidly. There was no great difficulty in finding work for the demobilized soldier.

(2) Production of both durable and non-durable consumers goods started to improve between December 1918 and February 1919.

(3) Activity in the heavy industries, on the other hand, declined till the middle of 1919, when recovery set in.

(4) The building industry, greatly restricted during the war, showed a very sharp increase in activity from the beginning of 1919 in both residential and other construction; owing to the rise in construction costs, however, the movement was reversed later in the year.

(5) This expansion sprang from the accumulation of a backlog of requirements, on the one hand, and of financial assets on the other, which, though not liquid in form, could easily be turned into money owing to the banking policy followed. This policy also permitted a considerable expansion of commercial loans.

¹ It has been suggested (by Professor Goudriaan) that the Government should offer public works for contract at prices slightly below the level at which it considered that the price fall should come to a stop. This would render the inception of a public works programme automatic. And, since it would definitely state how far the Government was willing to let prices drop, it might be a very effective check on further deflation.

(6) Interest rates were not raised before the end of 1919, in order to facilitate funding of the Government debt at a low rate, and so credit expansion continued almost unchecked.

(7) The expansion was further stimulated by Government deficits, which continued for a year after the Armistice, and by credits, both official and private, granted to foreign countries.

(8) In view of the limited productive resources and in particular the limited supply of raw materials, the expansion quickly developed into a speculative price boom. For a short period (namely, for most commodities, the last quarter of 1919 and the first quarter of 1920) prices rose because demand was high, and demand was high because prices were expected to rise further.

(9) Wages increased with the cost of living. But the rising prices tended to curtail demand from other income groups, and in particular, it would seem, demand for goods of long durability.

(10) A boom such as this was bound to break. The tightening of credit early in 1920 was one of the factors directly contributing to this break.

(11) At about the same time the special factors tending to stimulate the United States economy after the war lost part of their force as Europe slowly resumed its exports, as stocks in overseas countries began to reach their normal markets thanks to the increase in shipping facilities, and as relief credits were discontinued.

(12) The ensuing depression remained moderate during the summer of 1920 but rapidly gathered force in the autumn. Production fell off somewhat earlier in the non-durable goods industries than in the heavy industries.

(13) The depression was, on the whole, steep but short, the year 1921 showing approximate stability in industrial production at a level about 30% below the 1920 peak.

(14) This stability conceals a decline in the output of durable goods continuing till July 1921 accompanied by a rather sharp revival of the production of non-durable goods as early as January 1921. Construction, too, revived early under the influence of a fall in building costs.

(15) With the agencies of war-time control disbanded almost immediately after the Armistice, the post-war boom went on practically unchecked by any form of control during its initial months. As the Federal Reserve Banks felt compelled to adjust their policies to the requirements of the Treasury, checks from the monetary side became impossible until the end of 1919.

(16) The restrictionist banking policy started at the end of 1919 continued after the 1920 turning point till well into 1921, and this fact may be held partly responsible for a parallel fall in money prices and costs, which tended to aggravate the depression.

PART II

ECONOMIC FLUCTUATIONS IN THE UNITED KINGDOM, 1918-1922

1. *Introduction.*

The task which faced those responsible for economic policy in Britain after the Armistice presented two essential difficulties. First, the administrative machinery and personnel, organized to obtain maximum production, to buy the maximum of supplies, to weed out unnecessary workers, had to be adapted to the reverse process of cancelling orders, selling surplus stocks and finding employment for the demobilized soldiers. Secondly, whereas the objective of the war economy was clearly defined, that of the peace economy was not. Peace might entail either a boom, fed by the unsatisfied demand and the accumulated liquid assets of industries and private persons, or a depression and unemployment owing to the cancellation of Government orders and the demobilization of millions of men. There was uncertainty as to which of these two possible situations would prevail after the Armistice; or, if both were to arise, which would precede the other.

Furthermore, official opinion desired at the same time a boom and falling prices. A boom would help to solve the problem of creating employment for the demobilized. Falling prices, on the other hand, would make possible the coveted return to a substantially lower level of prices and the re-establishment of the gold standard at the old rate. Thus policies had to be framed to deal with an unknown situation without a clear-cut objective. Nor, after the Armistice, was it immediately clear how the situation was going to develop. The doubts as to whether a boom or a slump had to be faced were not dissipated.

Actually, a boom occurred from about the middle of 1919 to the middle of 1920 and this boom was sandwiched between a minor recession, which prevailed during the first half of 1919, and a more severe depression starting in the autumn of 1920. Thus, for some six or nine months after the Armistice, the situation remained ambiguous. This may explain both errors and hesitations in the formation of policy. The first two post-war budgets

were presented just before the turning points of business, in the month of April of 1919 and 1920; and anticipations for the next financial year, based on the existing situation, proved on both occasions to be entirely off the mark. It was permissible to fear that measures to check a boom might precipitate a slump; measures to prevent a slump might cause a full-fledged inflation.

Most of the factors influencing the economic fluctuations in the United Kingdom were similar to those which have been shown to have determined the course of events during this period in the United States. For this reason, only the identification of these factors and a brief historical description of their nature and effects is required in the present study. The main differences are due to the greater importance of foreign trade and the international balance of payments in the United Kingdom.

2. *War finance 1914-18.*

It is convenient to consider first the financial policy followed during the war, since this policy had important effects on the cyclical fluctuations which took place shortly after the Armistice. Government demand for war purposes gave rise to a continual increase in total expenditure and a part of Government borrowing had to be met by credit creation. After a state of full employment had been reached (spring of 1915) this credit creation inevitably entailed inflation. The form of borrowing having the most direct influence on the credit structure and the most inflationary influence was the Ways and Means advances by the Bank of England.¹ An advance of this type of £1 million, after being spent by the Government, has the effect of increasing by the same amount both deposits held in the commercial banks by the public, and the banks' balances at the Bank of England. The increase of £1 million in the liabilities of the banks, however, only requires an increase in cash reserves by the customary fraction of that amount, and the remainder can be lent again to the Government or the public. One initial advance of a given amount thus eventually places several times that amount of purchasing power in the hands of the Government and the public.

Besides lending directly to the Government, the banks also granted credits to private subscribers to war loans.

¹ The published figures of Ways and Means advances also include an unknown amount of advances, through the Bank of England, of spare balances of commercial banks and of foreign deposits, a system in force from early in 1916 to July 1919.

The painful after-effects generally ascribed to this inflation during the war were to a great extent due to certain post-war factors:

1. The widespread opinion, authoritatively expressed by the Cunliffe Committee and subsequently acted upon by the Government, that the prestige of London as a world financial centre was bound up with an eventual return of the currency to the pre-war gold parity. Because of the depreciated value of sterling in 1920 in relation to gold, or the dollar, the pre-war parity could only be restored by a process of deflation.

2. The deflation in the United States, starting in the middle of 1920, which enhanced the real value of gold and thus made the British deflationary process still more painful.

3. The fact that the removal of war restrictions on credit, trade and industry, was accomplished at a moment when the inflationary financing of public expenditure had not yet been brought to an end. This added post-war and much less controlled inflation to war inflation, and so made the starting point of deflation in the middle of 1920 much higher than it would have been a year earlier.

Moreover, the modalities of the inflationary war finance tended in some respects to aggravate its after-effects.

In March 1920, when new borrowing had come to an end, the domestic national debt of £6227 millions was divided as follows:

I. Long-term debt (over 8 years)	£2885 millions, or 46%
II. Medium-term debt (between 1 and 8 years)	£2090 millions, or 34%
III. Floating debt (ways and means advances, treasury bills)	£1252 millions, or 20%

That so large a proportion of floating debt had been allowed to accumulate was due to various causes. Initially, the general expectation that the war would be of relatively short duration may have exerted an influence. Moreover, with interest rates going up continually, lenders were expecting a further rise in rates all through the war and so were less willing to buy long-term bonds for fear of depreciation of their capital value. The Government tried to meet this difficulty by granting subscribers the right of conversion into subsequent loans. But this privilege was disadvantageous to the Government as it meant a rise in the interest cost not only of current borrowing but also of the loans issued earlier.¹

¹ U. K. Hicks: "The Finance of British Government," pages 316-320.

So long as war restrictions controlled private investment and consumption, the influence on the speed and extent of inflation exerted by the form chosen for Government borrowing was limited. But with the removal of those restrictions after the end of the war, the large floating debt gave rise to serious problems which will be discussed below.

The methods of war-time Government finance have been criticised for the encouragement given to the financing of private subscriptions to war loans by bank credit.¹ This resulted in the Government having to pay the same rate of interest for credit created by the banks as for private savings. The Government could have borrowed cheaper if it had gone direct to the banks instead of to the public and the inflationary effect of such a procedure would not have been greater. Moreover, illusions about the extent of inflation would have been avoided.

3. *The period of transition: from the Armistice to the middle of 1919.*

Demand for war purposes dropped off before peace demand could develop with full force. Of the £142 million war contracts outstanding at the date of the Armistice, 86% had been terminated or were under notice of termination by December, 1918, while it proved to be necessary or more economical to complete most of the remaining 14%.

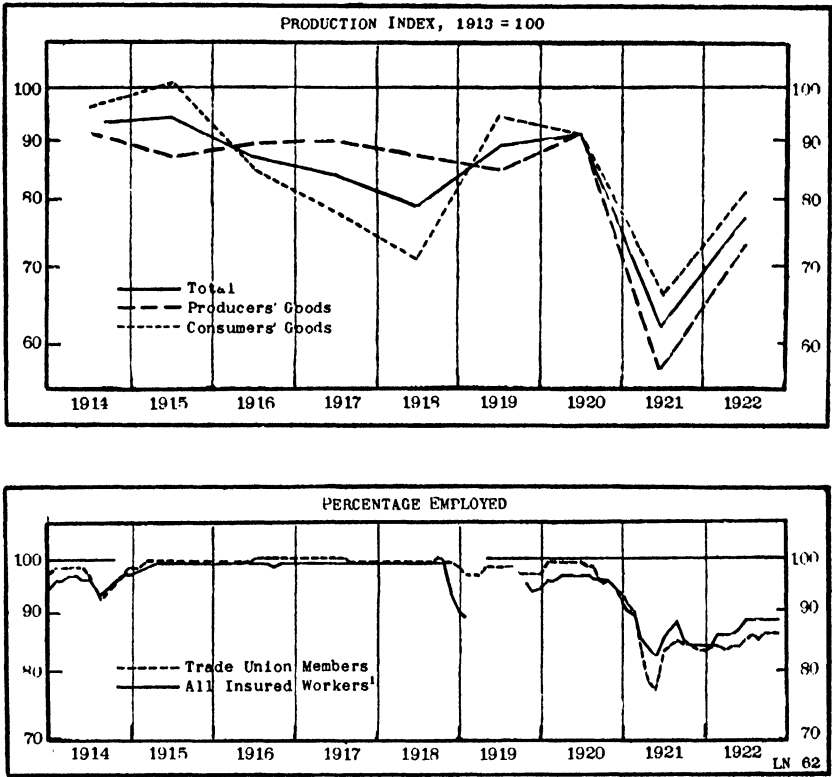
The movement of production and employment after the Armistice may be seen from Diagrams I and II. In Diagram I is shown the only available production index covering the whole period under consideration, which gives annual figures only.² It brings out clearly the sharp decline in the production of consumers' goods during the war (30%), while that of producers' goods was maintained almost at the 1914 level owing to war orders. In 1919, consumers' goods recovered rapidly to 30% above the 1918 level,³ while producers' goods rose only slightly, and did not reach the 1913 level in either 1919 or 1920. The output of producers' goods, however, was affected by the shortening of the working week and by strikes (*cf.* Section 4).

¹ See W. T. C. King in *The Banker*, April, 1940.

² This index is by Hoffmann, published in the *Weltwirtschaftliches Archiv* of 1934. The index of the London and Cambridge Economic Service (shown quarterly in Diagram IV) begins in 1920 only, and does not distinguish between consumers' goods and producers' goods. (It may be noted that, in Hoffmann's index, the latter group includes coal.)

³ Obviously, the increase of the volume of goods becoming available for civilian consumption was much larger.

Diagram I—Production and Employment

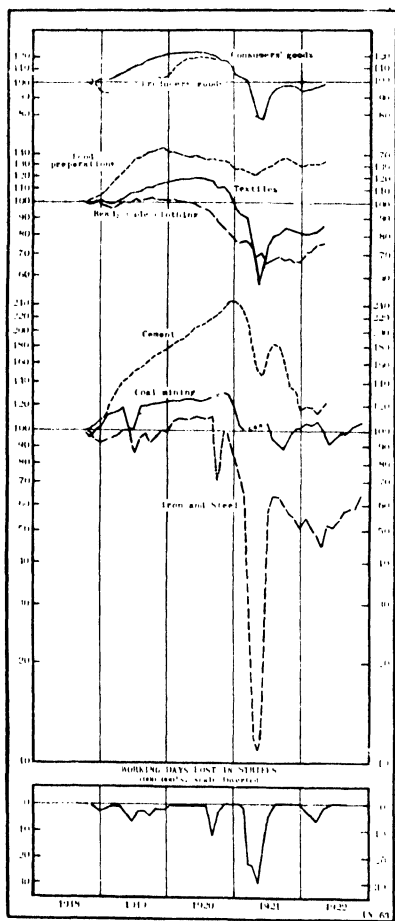


¹ March through October 1919, and October 1920 not available.

Diagram I also shows the employment percentages of trade-union members and of workers insured against unemployment. Both series are reliable indices of the state of full employment during the war. After the war, when union membership increased rapidly and the scope of the insurance system was changed several times, they probably fail to give as good an indication of the employment situation.¹ A notable difference between the two indices is to be observed in the first few months after the Armistice. While union employment did not sink below 97%, unemployment in insured industries (which were then mostly the heavy industries) reached 10.7% in February 1919. For industry as a whole, the highest level of unemployment was touched about the beginning of May, 1919, when 1.1 million per-

¹ Cf. Appendix II on employment series during this period.

Diagram II—Employment Indices
October 1918 = 100



sons (700,000 civilians and 400,000 demobilized soldiers) were receiving an out-of-work donation, which was at that time available for all unemployed persons.

The demobilization was carried out rapidly during the first months of 1919, passing the two million mark by the middle of March.¹ The great majority of the demobilized soldiers was absorbed in industry, the percentage of those claiming out-of-work donation fluctuating around 15% in April and May, and around 10% towards the end of 1919.

Diagram II gives employment indices for various industries and groups of industries.² During part of the period under consideration, series reflecting approximately employment in the consumers' goods and producers' goods industries, are available (cf. Appendix II). Employment in the consumers' goods industries began to recover as early as December, 1918, to reach a level of about 120 (October, 1918 =

100) by the middle of 1920. The producers' goods employment index declined in the early months of 1919; after an interruption of the index for eight months, it shows a sustained rise up to the middle of 1920.

¹ By the end of 1919, nearly four million men had been demobilized.

² The base of these indices is October 1918. For the sake of clarity, figures for earlier months of 1918 are not shown in the diagram. They will be found, however, in Appendix III. It will be seen from these figures that the indices would have been only very slightly different if the average for the year 1918 had been chosen as a base.

These indices are supplemented by the employment series for various industries¹ and indices representing the number of working days lost by strikes. A comparison of the employment and the strike series shows that many of the short-term fluctuations in the former can be attributed to strikes, either directly or indirectly—for example, through the interruption of transport and the curtailment of supplies of coal or raw materials. In the textiles industry, as in ready-made tailoring, a certain hesitation is noticeable at the beginning of 1919, a hesitation due to fears that a quick liquidation of Government stocks of raw and manufactured textiles might break the market. In the production of foodstuffs and cement, there was a strong and immediate revival after the Armistice.

Coal mining, which had also suffered from withdrawal of labour during the war, likewise showed an immediate increase of activity. On the other hand, an immediate recession from the level of war-activity occurred in the iron and steel industry; this recession was, however, slight both in extent and duration, though the increase in 1919-1920 over the October 1918 average was naturally less than in the consumers' goods industries. Thus employment recovered very quickly after the war. The position was not, however, one to create unqualified satisfaction, with over a million unemployed and 15% of the demobilized troops unable to find jobs half a year after the Armistice.² The cause of the difficulty in achieving full employment was partly the necessity of adapting industry after the war to civilian demand; but the persistence of a by no means negligible degree of unemployment all through the 1919-1920 boom seems to be attributable to special factors, such as the lack of certain types of skilled labour. (Cf. Section 4.)

The removal of pivotal war restrictions on industry and trade took place in the period of adjustment up to the middle of 1919. Capital issues for the development of home industry and public services were gradually freed from Treasury sanction.³ Further, the restrictions on the importation of, and dealings in, industrial raw materials, and on the employment of industrial equipment

¹ The figures represent "employment" except in the coal and iron and steel industries, where the "number of shifts worked" is shown (or employment corrected for short time).

² If account is taken of the ex-soldiers who did not intend to take up a situation as employees, the percentage of those willing but unable to find employment is considerably larger.

³ The control of foreign issues followed in November 1919, but private foreign lending did not come into full swing until 1921, when demand for capital for the home market receded.

(cotton and wool industries) were lifted. The iron and steel subsidies were stopped by stages, and building was made free of licence. Coal was the only important industrial material the home and export control of which was continued (up to the end of 1920).

On September 1st, 1919, followed the general abolition of all restrictions on imports of manufactured goods except certain "key products".

The decontrol of food took a much longer time. As will be seen from Table I, not only did the rationing of meat continue for over a year, and that of sugar and butter for still longer, but the increases in the sugar and butter rations allowed during 1919 had subsequently to be withdrawn. Similarly, maximum prices for veal, pork and fish lifted before the middle of 1919 were re-imposed during the second half of that year. The long retention and the tightening of control was made necessary by the speculative price developments on world markets,¹ the scarcity of tonnage for the importation of foodstuffs and, with respect to meat, the desire to prevent the excessive slaughter of livestock at home. It was due in part also to the public's clamour for control when, in the middle of 1919, the slow downward movement of prices prevailing since the Armistice was reversed.

Table I—Post-War Rations of Foodstuffs

Commodity	Derationed	Rations	
		Period	Weekly Ration
Tea	Dec. 1918	Nov. '18-Dec. '18	2 oz.
Jam	Apr. 1919	Nov. '18-Apr. '19	4 oz.
Butcher's meat	Dec. 1919	Nov. '18-Dec. '19	1s. 4d.
		Dec. '19-May '19	1s. 8d.
		May '19-Dec. '19	2s.
Butter Margerine	May 1920 } Feb. 1919 }	Nov. '18-Feb. '19	6 oz.
			butter only:
		Feb. '19-July '19	1 oz.
		July '19-Aug. '19	2 oz.
		Aug. '19-Dec. '19	1½ oz.
		Dec. '19-Apr. '20	1 oz.
		Apr. '20-May '20	2 oz.
Sugar	Nov. 1920	Nov. '18-Jan. '19	8 oz.
		Jan. '19-Sept. '19	12 oz.
		Oct. '19-Jan. '20	8 oz.
		Jan. '20-March '20	6 oz.
		March '20-Aug. '20	8 oz.
		Aug. '20-Oct. '20	12 oz.
Oct. '20-Nov. '20	16 oz.		

¹ With respect to sugar, *cf.* also below, section 8.

Little has been published concerning the adaption of war industries to peace production.¹ Of the 302 national munitions factories owned by the Government representing a capital value of £65 million, a large number were sold or reverted to their original owners; others were operated by the Government to break up munitions, to repair army trucks, etc., in order to bring the Government surplus stores into a more readily saleable form. Both the Government and the private factories were rapidly converted for peace production. By about April 1919 a number of munition firms were effectively producing for the civilian market. Many of them turned to engineering, the production and repair of railway carriages, etc. Some of the explosives plants were transformed for the production of dyestuffs, which were protected as "key" products.

In public finance, there were particularly serious transition difficulties. The war had left the money market in a situation very susceptible to an inflationary credit expansion upon de-control of industry. A large amount of liquid wealth, cash, or titles to floating debt was in the hands of banks and the public. The complicated operations carried out by the Treasury in the middle of 1919 were designed to convert as much of this wealth as possible into a less liquid form before the boom started. It is generally agreed that by these operations the best was made of a difficult situation.² First, the market was partly emptied of Treasury Bills so that they should not compete with the Victory Loan; the Government's demand for money during this period was met by Ways and Means advances which, to restrict their inflationary effect, were as much as possible loans through, rather than by, the Bank of England.³ After the floatation of the Victory Loan, a manipulation of interest rates succeeded in inducing British and foreign depositors with the Bank of England to convert their deposits into Treasury Bills, the sale of which was immediately resumed.

But the effect of these operations was limited by the fact that the market wanted to remain liquid or preferred equities. The Victory Loan was not a success. The amount of cash and Treasury bills remaining with the banks still allowed of considerable creation of credit before the conventional ratios of deposits to cash and to bills would be reached; and the cost of a large floating debt made the Government reluctant to apply high interest rates as a measure against credit expansion.

¹ Cf. "British Industrial Reconstruction and Commercial Policies", United States Department of Commerce, *Special Agents Series*, No. 193.

² Cf. U. K. Hicks, *op. cit.*, pages 332-3.

³ Cf. page 40, note 1.

4. *The post-war boom.*

The danger of a boom was serious since a variety of bottlenecks prevented any considerable expansion of production after the middle of 1919.

(i) *Labour.* It would seem that in the boom year 1919-20 skilled labour was, in general, the shortest factor of production. Though efficiency presumably increased as demobilized soldiers replaced the less fit workers who had held their place during the war, there was, it was believed, a widespread decline of productivity as "wage-earners, full of natural apprehension that the flood of demobilized soldiers would be used to swamp their efforts to maintain their war-time gains, showed a disposition to insist on more pay and shorter hours and to indulge in slack time-keeping after the hard work of the previous four years".¹ There was considerable absenteeism. Only under the stimulus of the depression did labour productivity finally improve.² There are no statistics by which to measure this change in the productivity of labour in general. The coal statistics given below seem, however, to bear out the above contention. Production per hour declined after 1918; and it was not affected, in the short run, by the reduction in working hours.

Index of Productivity in Coal Mining, 1918 = 100

	<i>Production per shift</i>	<i>Hours per shift</i>	<i>Production per hour</i>
1918	100	8	100
1919, first half	94	8	94
1919, second half	81	7	93
1920	82	7	94
1922	104	7	119

Source: Output figures (*The Economist*) divided by index of number of shifts worked, used in Diagram II. (Owing to the prolonged stoppage in 1921, no figure can be given for that year.)

During the first half of 1919, the average working week was shortened by about 10%, while weekly wages remained about

¹ *The Economist*, Commercial History of 1919.

² *The Economist*, Commercial History of 1920. (It may be observed that the Economist took in general an attitude sympathetic to labour in these years).

stable. There was much unrest and ill-feeling; strikes were numerous¹ and their dislocating effects extended beyond the industries directly affected.

Diagram I shows a more favourable employment situation for trade union members than for all workers covered by unemployment insurance. This fact is confirmed in the few instances where comparison is possible for individual industries:

	<i>Percentage Unemployed, end of Dec. 1919</i>		
	<i>Union Members</i>	<i>Non-Members</i>	<i>Total Insured</i>
Shipbuilding, Engineering and Iron-founding	7.2	11.1	9.8
Leather	.9	4.4	3.5
Miscellaneous Metals	1.2	3.2	2.8

Union members were drawn largely from the skilled workers. These figures suggest, then, that there was a shortage of skilled labour which prevented full employment of unskilled labour. This inference is confirmed by contemporary observation.

(ii) *Transportation*. Congestion at the port terminals of railways and scarcity of railway rolling-stock were aggravated by a diversion of goods from coastwise shipping to the railways owing to the lower rates offered by the railways. In August, 1919, the Government undertook to pay the difference between coastwise and railway freight rates for any goods coming from or going abroad which were shipped coastwise. Not until January 15th, 1920, were railway goods rates increased by 50% to 100% to put them on an economic basis.

(iii) *Coal*. Congestion on the railways, decreased labour productivity, and, as indicated above, strikes were an important cause of the shortage of coal, which again set a limit to the production of iron and steel and manufactures thereof. Exports of coal remained subject to restriction, and export prices ruled higher than prices on the home market, up to 1921. The figures for coal production, trade and apparent consumption are shown overleaf:

¹ Number of working days lost by strikes, in millions:

<i>Ave. 1900-1913</i>	<i>1919</i>	<i>1920</i>	<i>1921</i>	<i>Ave. 1922-1925</i>	<i>1926</i>	<i>Ave. 1927-1933</i>
8	35	27	86	12	161	4

	<i>Metric Tons (000,000's)</i>						
	1909-1913	1918	1919	1920	1921	1922	1923
Production	274	231	234	233	166	254	280
Exports*	86	41	48	39	36	84	99
Imports	—	—	—	—	3	—	—
Apparent consumption†	188	190	186	194	133	170	181

* Including bunker coal, but excluding coke.

† Production — exports + imports.

It will be observed that the decline in production in 1919 and 1920 as compared with pre-war years (40 million tons) was about equal to the decline of exports in those years in comparison with the pre-war period, so that consumption (measured in this rough way) was very little affected.

(iv) *Raw materials.* With the freedom of imports restored at an early date and with Government stocks of certain raw materials available, shortage of raw materials did not constitute so serious a problem as had been anticipated. In some industries, nevertheless, lack of raw materials retarded the resumption of activity; this was the case, for instance, in the worsted section of the wool industry.¹

(v) *Plant and machinery.* This factor of production was, on the whole, not so scarce as skilled labour. In the month of greatest activity (September, 1920), only 83% of the number of utilizable blast furnaces were in operation. The textile industries, considerably restricted towards the end of the war, could expand very largely before capacity was reached.

Skilled labour and transport constituted in fact the most serious limiting factors in the 1919-20 boom. Scarcity of the first was, to some extent, met by the plan of demobilization, which gave preference to "pivotal" men. This, however, did not suffice to remove the shortage.

In the face of great inducements to invest and a high propensity to consume, both tending to an expansion of total demand, this shortage was bound to lead to inflation, if demand was not kept down.

There are, unfortunately, no even approximately complete figures of investment during this period. It is known that heavy investment was effected by firms, largely out of the amortization and other reserves they had accumulated during the war for the

¹ G. H. Wood, "An examination of some statistics relating to the wool textile industry", *Journ. Roy. Stat. Soc.*, 1927, II, page 284.

adaptation of their plant to civilian demand, to replace worn-out machinery and, in some cases, to expand productive capacity in order to meet an expected increase in demand which, when it materialized, proved to have a brief span of life. If only on account of the technical difficulties of converting plant and the practical impossibility of anticipating the nature and extent of immediate post-war consumers' demand this new investment got into full swing rather later than did the manufacture of consumers' goods. Such figures as are available relating to capital issues and the loan expenditure of local authorities confirm this fact. As these figures cover only part of total investment they are, however, of restricted value as evidence.

Table II—Selected Figures on Investment

		£ (000,000's)			
		<i>Quarter</i>	<i>1919</i>	<i>1920</i>	<i>1921</i>
Home capital issues ¹	I		35	127	36
	II		35	85	26
	III		43	67	10
	IV		76	53	28
	Total		189	332	100
Expenditure out of loans by local authorities (Eng- land & Wales) ²			24	94	128

A large part of the saving and investment that was effected during the first eighteen months or more after the war took the form of the accumulation of stocks of raw materials by firms and of more or less durable consumers' goods by the public. As will be shown below, this purchase for stock was stimulated by the rapid post-war rise in prices and passed through the stage of the replacement of the essential to that of the acquisition of speculative inventories.

The influence of public finance on the general credit situation and on price movements, at any rate in the first two post-armistice years, is not easy to determine. As may be seen from

¹ Excluding Government loans for national purposes and conversion issues. (Midland Bank's figures).

² Fiscal years starting April 1.

Table III below there was a Government deficit of £580 million

Table III—Government Finance

	GOVERNMENT			CHANGES IN PUBLIC DEBT (+ increase, - decrease)						
	Revenue ¹	Expenditure	Surplus (+) or Deficit (-) ²	Total	Foreign	Domestic				
						Total	Treasury Bills	Ways & Means Advances	Other	
1919	I	380	529	-149	+ 66	-52	+118	-138	0	+256
	II	186	401	-215	+269	+ 64	+205	-160	+321	+ 44
	III	273	339	- 66	+ 74	- 12	+ 86	+ 55	-380	+411
	IV	236	386	-150	+254	+ 12	+242	+255	-153	+140
	Year	1075	1655	-580	+663	+ 12	+651	+ 12	-212	+851
1920	I	643	540	+103	-204	-125	- 79	0	- 38	- 41
	II	315	285	+ 30	- 30	+ 44	- 74	-105	+ 39	- 8
	III	304	257	+ 47	- 45	- 12	- 33	+ 87	-101	- 19
	IV	270	301	- 31	+ 31	-100	+131	+ 13	+163	- 45
	Year	1532	1383	+149	-248	-193	- 55	- 5	+ 63	-113
1921	I	537	353	+184	-211	- 32	-161	+ 19	-152	- 25
	II	204	271	- 67	+ 88	- 10	+ 80	-100	- 2	- 21
	III	252	227	+ 25	- 27 ^a	- 9	- 18 ^a	- 62	+ 9	+ 35 ^a
	IV	221	242	- 21	+ 11	- 16	+ 27	- 99	+ 39	+ 87
	Year	1214	1093	+121	-139	- 67	- 72	- 42	-106	+ 76

¹ Includes revenues from the sale of government assets.

² Includes changes in Exchequer balances.

^a Excluding an increase of £102 million due to conversion.

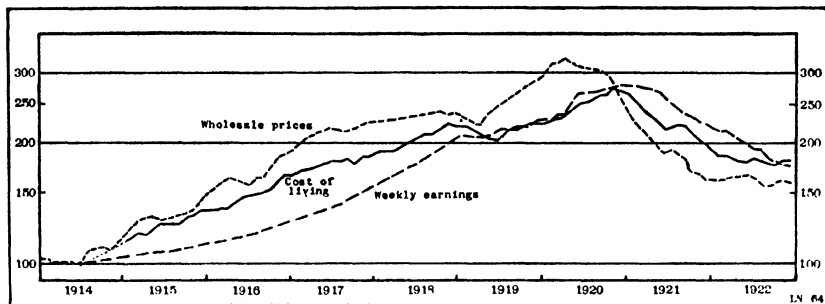
NOTE: Owing to adjustments to the debt figures which are not applied to revenue and expenditure, there is in some quarters a lack of correspondence between the total debt and surplus or deficit figures. The differences are usually compensated by differences in the other direction in the next quarter. (e.g. 1919 IV and 1920 I, 1921 I and II.)

in 1919 which might have constituted a factor stimulating demand. But there is no direct evidence that this was the case as Treasury bills in the hands of the banks and Ways and Means advances were reduced, while there was a large increase in long-term borrowing. Similarly the Government surplus in 1920, which might have contracted demand, was accompanied by a reduction in long-term debts and an increase in Treasury bills held by the banks and in Ways and Means advances. In 1921, however, a small budgetary surplus was accompanied by a considerable increase in funded debt and a contraction in short-term debts; in this year, therefore, the operation of public finance probably exercised a deflationary influence at a moment when stimulation was required.

By the middle of 1919, private demand had carried production to practically full employment of the scarcest factors of production. From then onwards a new inflation set in. However, the decontrol and the shift from Government demand to private de-

mand had, in the meantime, changed the character of the inflation. During the war the rate of inflation was to a large extent under Government control. The Government could within certain limits choose what proportion of its expenditure would be met from taxation, and a system of priorities and restriction of capital issues kept private investment within bounds. The post-war inflation, however, was uncontrolled as long as the banks were willing to continue to expand credit. After decontrol, private demand was itself stimulated by rising prices, and the inflationary boom thus tended to reinforce itself. Diagram III shows the movements of wholesale prices, the cost of living, and weekly wages for the nine years 1914-1922. Real wages per week

Diagram III—Prices and Wages
July 1914 = 100



would seem to have been at about the 1914 level all through the boom. With a 10% reduction of the working week, this means that real labour costs per unit of output were probably 10% higher than before the war, and mounting. The insistence of labour on a reduction in the working week without a change in real weekly income was at first a powerful factor in raising costs and prices.¹ As is common in countries with strongly organized labour, real wages of those employed rose at the beginning of the depression as the cost of living fell more rapidly than wages. This discrepancy between money wages and the cost of living did not disappear until the autumn of 1922. Wholesale prices rose much more steeply during the boom than they

¹ It may be doubted whether the reduction in hours led, at least in the short run, to an increase in output per hour (see, for instance, the coal mining figures given on page 48). Moreover, in the industries where such an increase was most likely to take place, workers were generally paid on a piece-rate system. When working hours were shortened in 1919, piece-rates were mostly increased simultaneously by the same percentage, so that the benefit of increased productivity, if any, went to the worker in higher earnings and not to reduce costs. (Cf. A. L. Bowley, "Prices and Wages in the United Kingdom, 1914-20," App. III and *passim*.)

had done in the war, especially in the latter stages of the war. The turning-point was reached in April, 1920.¹

Once the rise in prices had started, the very fact of rising prices called forth fresh demand in the following four ways:²

1. Purchases as much as possible in advance of requirements constituted both a precaution against shortage at a later moment, and a source of considerable profit. Indeed, with prices

*Table IV—All Stocks of Food in the United Kingdom, Expressed in Weeks of Pre-war (1909-13) Consumption.**

Foodstuffs	Stocks				
	September 1st			December 31st	
	1914	1918	1919	1919	1920
I. Goods, the imports of which were still controlled on September 1st, 1919.					
Wheat (including flour as wheat)	22	28	21		
Barley	36	30	27		
Oats	37	55	44		
Sugar	4	14	8		
II. Goods, the imports of which were recontrolled before September 1st, 1919.¹					
*Bacon and Ham	3	21	14		
*Lard	5	16	12		
*Cheese	6	12	5		
III. Goods, the imports of which were free by September 1st, 1919.					
*Meat other than Bacon	5	6	9	13 ²	4 ²
*Butter	4	4	5		
*Margarine	3	2	4		
*Condensed milk		29	41		
Tea	14	18	26	41	43
Coffee	84	160	192 ³	143	
Cocoa	22	22	120	55	79

* For commodities the consumption of which is drawn partly from home-produced supplies, partly from imports, and for which it seems plausible to assume that stocks are held largely to even out the irregularities of imports, the stock figures are expressed in weeks of pre-war consumption from imports.

¹ On the reimposition of control in the middle of 1919, *cf.* page 46.

² Figures not strictly comparable.

³ June 1st.

SOURCE: *W. H. Beveridge, "British Food Control"*. Figures in the last two columns based on figures taken from *The Economist*.

¹ This is the month when the total index reached its maximum. The first sub-group "materials" (and each of its three composing series "minerals", "textiles", and "sundry materials") had its peak in February, whereas the other sub-group "food-stuffs" reached its maximum in July. The diversity of the movements of the sub-indices explains the fact that, owing to differences in the weighting systems, the indices of the Economist, the Statist, and the Board of Trade showed maxima in March, April and May respectively. (*Cf.* also section 8).

² This internal process of the boom was much the same as that analysed in Part I.

rising at that rate, an interest rate of 45% per annum, less the percentage cost of handling and storage, would have been required to take all profitability out of the mere holding of the average commodity on borrowed money—while the relevant short money rates at no time exceeded 7%.

Some evidence concerning the accumulation of stocks can be obtained from the figures for food stocks given in Table IV.

It will be observed that stocks of all foodstuffs which were not subject to import restrictions rose appreciably during 1919, and that extremely large stocks of tea and cocoa were carried all through 1920.¹ On the other hand, stocks of cereals and sugar were allowed to decline;² for bacon, ham, lard and cheese, control was reimposed when stocks ran down.³

The import⁴ and stock statistics do not, however, give a full account of the buying activity of British importers. Often, commodities bought could not be transported and were temporarily stored in the countries of origin (e.g., timber in Sweden); and for some commodities, the accumulation of physical stocks was replaced by heavy forward buying.

The fall in the foreign exchange value of the pound, which depreciated by 20% during the year ending March, 1920, was in part due to these large imports at high prices and reinforced the rise of internal prices.⁵

2. Demand for consumption goods was fed by the windfall gains made on the appreciating commodity values and by the soldiers' bonus.⁶

3. Exaggerated profit prospects led to a hectic speculative activity in the capital market. Though dividends declared re-

¹ The following figures are also indicative of excessive imports in 1919 and/or 1920.

	<i>Imports in long tons (000's)</i>		
	<i>Ave. 1909-1913</i>	<i>1919</i>	<i>1920</i>
Tea	155	220	192
Cocoa	33	110	103
Tobacco	59	155	98

² On sugar control, *cf.* also below, section 8.

³ The insufficiency of bacon imports is explained by the fact that, though imports were temporarily free from March 1919, the spread between the maximum price at home and the rising world market price was insufficient to make imports profitable.

⁴ *Cf.* also Table VI.

⁵ *Cf.* section 5.

⁶ In the financial year ending March 31st 1920, subscription to savings certificates still exceeded repayments by a considerable amount (about £50 mln.). The Joint Stock Banks holdings of Government securities increased by £87½ mln. during 1919; but, since the banks subscribed in their own names for £111 mln. of Funding Loan and Victory Bonds during the same year, there appears to have been no selling by the public to the banks of the Government securities outstanding at the end of 1918.

mained on an average fairly constant up to late in 1920, and gilt-edged prices declined by 16% during 1919, share prices¹ increased by one-third in the same period (and fell even more in the following year). Expectation of further appreciation was reported to be the main incentive for buying shares.

4. The market also absorbed a flood of new capital issues. In many instances such issues did not serve for capital development, but only for higher capitalization of existing equipment or the buying up and refloating of enterprises.² The most striking example is the boom in Lancashire cotton mills, which has been studied by H. Campion.³ He shows that of £38 million paid for 129 refloated spinning companies, £21 million was actually paid in by the subscribers to new shares.⁴ The remaining £17 million plus formation expenses (including compensation to former directors) was raised by loans, bank overdrafts and debentures.⁵ The high replacement cost of mills was quoted in justification of the enlarged capitalization.⁶ There was a similar wave of speculation in shipping.

Speculation in the capital market accentuated the rise in prices owing to the fact that on the enhanced value of the capital, buyers obtained credits which, when passed to the sellers, were likely to be regarded by them to some extent as consumable income.

Speculative demand, incited by a variety of inducements and nourished from a variety of sources, thus tended, owing to the limitations of production, to make demand at existing prices exceed supply. A natural cure for such a situation is a rise in price which compresses the real purchasing power of all persons with fixed, or slowly adjusted, incomes. During the war, and especially in the earlier years, the workers had belonged to this group. After the war, they maintained the real value of their weekly incomes. Accordingly, it required a steeper rise in price to bring total demand into line with productive capacity; for

¹ As measured by the London and Cambridge Economic Service index of 20 industrial.

² These issues are not included in Table II.

³ In an unpublished thesis, see Daniels and Jewkes, *Journ. Roy. Stat. Soc.*, 1928, page 167.

⁴ Prof. H. Campion takes a sample of 129 out of a total of refloated companies of over 200.

⁵ These phenomena may well be compared with the excessive mortgaging of agricultural land at the same time, in the United States, New Zealand, Egypt and many other countries.

⁶ Statement of Federation of Master Cotton Spinners' Associations to operatives, see *The Economist*, November 22nd, 1919, page 939.

the only means of restricting consumption now remaining were through the gradual depreciation of the fixed money incomes of the *rentier* class, and generally through the depreciation of all incomes during the time elapsing between earning and spending.

Such a speculative boom cannot go on indefinitely.¹ (i) Stocks of a speculative character will, after a certain time, tend to have a depressing effect on the market. (ii) The shrinkage of demand from the middle classes, owing to the rise in the cost of living, will in the end have adverse effects on employment. (iii) Higher prices and larger stocks require increasing advances from the banks, which will tend to impair their liquidity. Such limits to a boom of this kind arise even if the boom develops in virtually all countries at the same time. In view of this fact, it is a question of secondary importance whether the first impulse to a downward turn came from Japan (as some have argued) or from the United States, the United Kingdom or some other country or market. If, therefore, in the next section much importance is attached to the developments in overseas markets, this does not imply the view that in the absence of a breakdown on those markets the United Kingdom could have avoided a fall in prices of raw materials and a liquidation of speculative positions. Actually, home demand contracted first. The internal factors which led thereto will be considered in Section 6.

5. *Foreign trade.*

The degree of economic activity in the United Kingdom is proverbially dependent on the state of its export trade. Indeed it has been estimated that prior to 1914, one quarter of the national income was directly dependent on production for export.² This dependence is brought out clearly by the pronounced correlation between the quantum of exports and the level of production, shown quarter by quarter in Diagram IV.³ The exports of the United Kingdom consist mainly of coal and manufactured products. The low level of coal exports after the war has already been mentioned. For manufactured products, there was a brisk demand particularly in the raw material producing countries outside Europe, for the following reasons:

(i) These countries had sold their produce at very high prices during the war, and were getting even better prices in 1919;

¹ Cf. Part I.

² Cf. A. L. Bowley, "Some Economic Consequences of the Great War", page 207.

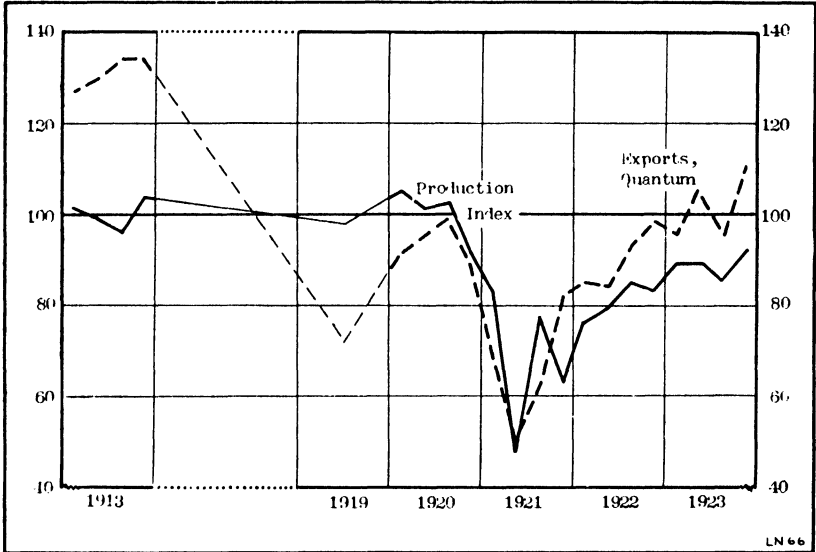
³ The high level of production in comparison with exports which this diagram reveals for the year 1919 would seem to constitute a proof of the strong stimulus to employment given by domestic investment in that year.

(ii) profiting from the international re-stocking boom of 1919, they exported on a large scale;

Diagram IV—Production and Exports

Production Index: 1913 = 100

Quantum of Exports (calculated as values in £'s (000,000) at 1913 prices)



(iii) during the war they had not been able to obtain sufficient supplies;

(iv) the high costs in belligerent countries and the high freight rates had made possible the establishment of local industries in many countries; this created a large demand for machinery;

(v) the rise in the price of silver stimulated imports into the countries on a silver standard (India, China, Mexico);

(vi) on the basis of this increased prosperity, a superstructure of speculation was built up in these countries similar to that in the United States and the United Kingdom: land was mortgaged, stocks were accumulated, etc.

Of the resulting demand, the United Kingdom was in a position to secure a large share. During the war her customers had had to turn to Japanese or American products; when British producers were again able to give their attention to exports, they were easily able to win back a good part of their pre-war markets

owing to better quality, long established preferences of consumers and, in comparison with the United States, lower prices.¹ To this should be added the accumulation of old orders, placed in the United Kingdom during the war, but not yet executed.²

Moreover, the United Kingdom had the advantage of being ready for export earlier than her European competitors. Though the United Kingdom lost some opportunities to the United States (e. g., in the Baltic and in Central Europe) because she was not able to start regular exports immediately after the Armistice, she profited considerably from coming into a brisk market while some of her competitors were still rebuilding their plants.

Finally, as compared with the United States, the United Kingdom exports were favoured by a 25% depreciation of the pound in terms of the dollar.

The pressing demand for exports and the prospects aroused thereby, reinforced the internal boom of prices and values in the United Kingdom. With so large a part of industry working at full capacity and in the presence of intense home demand, however, the exporters disappointed their overseas customers. As prices went up, they were very often unwilling to quote fixed prices, pressing "advance clauses" on the buyers. Deliveries were irregular and slow. Often, therefore, customers turned to the United States or Japan. As will be seen from Table VI, exports of manufactured goods even in 1920 averaged almost 25% lower than in 1913.

The world-wide depression of 1921, due in large part to the preceding speculative boom in raw materials, struck in particular the primary producing countries which constituted the main United Kingdom export markets. A sharp decline of orders from these countries was thus to be expected. It was of some advantage to the United Kingdom, however, that the depression set in on the home market a few months earlier than in most of her customer countries (except Japan). She was thus able to execute *en bloc* many overdue orders (some dating from years before), and ship them hastily to the foreign markets, where, for a time, prices remained good. These large unexpected deliveries, however, soon made the foreign exchange position of these countries

¹ Heavy cancellations of orders for Japanese goods by South America and Australian importers were reported immediately after the Armistice. (*Board of Trade Journal*, 1920, Vol. II, page 272).

² Japan had ordered 1½ million spindles (more than half of her 1913 capacity) in 1915 to 1917; not more than one-fifth of this had been delivered by the end of 1919.

even worse than it was for other reasons, such as the fall of raw material prices. Their high imports coinciding with low export values depressed their currencies (cf. Table V) and importers were very often unable or unwilling to pay the contractual prices, especially after the fall in the value of their currencies. Exporters had to take losses, for instance, in South American countries and in India, and for some time export business was stagnant. It recovered only when the old stocks were cleared and raw material prices improved, in the last quarter of 1921.

Table V—Exchange Rate to the £ in % of Par.

Country	Highest month in 1920 (February)	Lowest month in 1920 (December)
India	136	106
China	334	155
Argentina	115	67
Brazil	148	112 (Nov.)
Chile	85	54

Even at the height of the post-war boom, the volume of exports remained far below the 1913 level. As will be seen from Table VI, none of the three groups of exports shown reached the pre-war level before 1923:

Table VI—Imports and Exports, Quantum Indices

	Value	Quantum index (value at 1913 prices)					
	1913	1913	1919	1920	1921	1922	1923
<u>Imports Retained</u>	£ (000,000's)						
I. Foodstuffs	278	100	96	86	91	99	115
II. Raw materials	206	100	102	94	62	79	79
III. Manufactured articles	172	100	66	84	60	75	90
Total*	659	100	90	88	73	87	97
<u>Exports: U.K. Produce</u>							
I. Foodstuffs	34	100	44	55	49	53	70
II. Raw materials ^x	66	100	54	48	45	95	107
III. Manufactured articles	414	100	56	76	51	67	73
Total*	525	100	55	71	50	69	77

* Including a small miscellaneous group.

^x Mainly coal.

SOURCE: *Board of Trade Journal*.

In 1919, when exports were slightly over half the pre-war figure, imports were only 10% lower. The import of raw materials and foodstuffs was, in fact, at approximately the 1913 level owing in part to the speculative tendencies mentioned above,¹ though it must not be overlooked that in a number of cases depleted stocks had to be replenished. The import of manufactured articles remained well below the pre-war level, a fact which may to some extent be attributed to the protectionist use made of the import licence system.

The larger decline in exports is also reflected in the value figures, which show an import surplus five times as large as in 1913 (cf. Table VII).

Table VII—Balances of Payments
£(000,000's)

<u>Commodities:</u>	1913	1919	1920	1921	1922
1. Imports	659	1,461	1,710	979	899
2. Exports	<u>525</u>	<u>729</u>	<u>1,334</u>	<u>703</u>	<u>720</u>
3. Import surplus	134	622	376	276	179
<u>Gold and Silver:</u>					
4. Import surplus	<u>12</u>	.	-43	-11	-13
5. = 3+4	146	(662)	333	265	166
<u>Net Income from:</u>					
6. Investments	210	80	200	.	175
7. Shipping	94	400	340	.	110
8. Government transactions	-12	.	-7	.	-5
9. Other services	<u>35</u>	<u>40</u>	<u>55</u>	.	<u>40</u>
10. Total, services, etc. (6+7+8+9)	327	(520)	588	.	320
11. Estimated Capital Export(10-5)	181	(-142)	255	.	154

" . " Information for this item not available.

SOURCE: *Board of Trade Journal*; item 8: Royal Institute of International Affairs, "The Problem of International Investment", page 139.

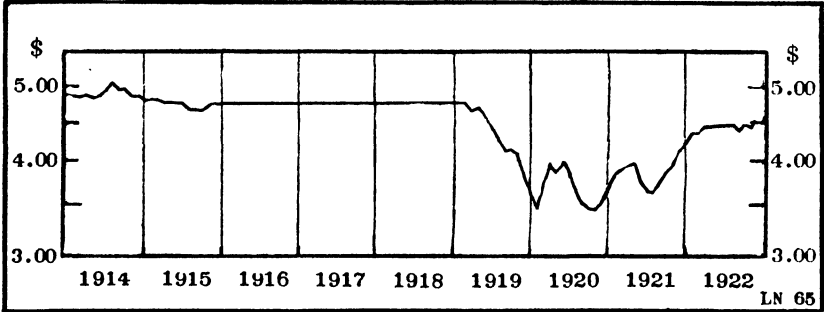
As invisible exports increased in a much smaller proportion, there would appear to have been a very considerable import of capital during 1919 (£142 million² as against a normal pre-war capital export of near to £200 million). The situation was stated to have improved in the course of 1919, so that by the end of that year invisible exports approximately covered the import surplus. The balance of payments situation is reflected in the movements of sterling. (Cf. Diagram V). From \$4.76½ after

¹ Import of materials was freed from control in March 13th, 1919—the same week in which sterling was "unpegged."

² This figure includes gold exports; moreover, the balance of payments figures for 1919 would seem to have been a rougher estimate than those for other years.

the “unpegging” in the middle of March, 1919, it fell to about \$3.40 in February, 1920. When the depression set in, the pound recovered, reaching \$3.95 in June 1920.¹

Diagram V—£ Sterling in terms of Dollars



6. *The downturn: internal factors.*

A run-away market in certain, especially primary, commodities is, as stated before, bound to lead to a reverse movement—though it is impossible to foretell exactly when it will come. Once the peak has been turned, all branches of activity will become depressed, not because demand, at stable prices, would not be forthcoming, but because falling prices exert a deterrent effect on enterprise. This tendency will be the stronger, if, at the same time, there is a feeling that costs can be reduced and efficiency increased over the whole line, and if Government and banks regard with favour any signs of deflation or take steps to promote it.

As is suggested by the employment diagrams, production declined earlier in the food than the textile industry and earlier in the textile than in the heavy industries. This order is what might have been expected in view of the nature of domestic demand. But the textile industry was of course largely influenced by overseas demand and no doubt also by the extensive speculation which took place. Moreover the seasonal demand kept the woollen industry and hosiery active longer than for instance cotton, linen or other textiles.

In shipbuilding the saturation or anticipated saturation in demand appears to have made itself felt very quickly. Table VIII

¹The stabilization of the £ at its pre-war parity in 1925 does not fall within the scope of this note.

Table VIII—Shipbuilding

Year and Quarter		Tonnage		
		Commenced	Under Construction ¹	Launched
1913	Year	1867	1956	1916
	I	425	2255	205
	II	660	2524	528
1919	III	714	2817	416
	IV	604	2994	459
	Year	2403		1602
	I	708	3394	454
	II	589	3578	523
1920	III	594	3731	483
	IV	506	3709	580
	Year	2397		2040
	I	393	3302 ²	434
	II	69	2795 ²	322
1921	III	51	2552 ²	308
	IV	55	1918 ²	467
	Year	568		1513

¹ At end of quarter or year.

² "Under effective construction", i.e., excluding tonnage on which work had been suspended. The figures for such tonnage were in the four quarters of 1921: 497, 735, 731 and 722. (*cf. London & Cambridge Economic Service, Special Memorandum No. 3*).

gives the figures for tonnage commenced, under construction and launched for each quarter, 1919 to 1921. The highest figures for new tonnage commenced were recorded in the third quarter of 1919 and the first quarter of 1920. Owing to the long period of construction of ships, tonnage under construction reached its peak value a year later than the earlier of these two dates, and the maximum of launchings did not come before the last quarter of 1920. In 1921 a considerable proportion of the work already in hand was suspended.

Credit stringency was an important factor curtailing the boom. As a result of the insistent demand for bank advances to finance the maintenance and expansion of stocks at rising prices, bank deposits rose from about £2,000 million at the end of 1918 to £2,500 million at the end of 1920. The London Clearing Banks, consequently, became unusually illiquid in the spring of 1920, as is seen from the following figures:

*Table IX—London Clearing Banks. Cash Ratio, 1919-1921**
Macmillan Report. (June and December omitted)

	Jan.	Feb.	Mar.	Apr.	May	July	Aug.	Sept.	Oct.	Nov.
1919	13.9	11.5	14.0	13.8	13.7	15.3	12.8	12.6	12.2	11.8
1920	11.8	10.7	9.8	10.6	9.65	10.6	10.2	10.7	11.0	10.3
1921	11.4	11.1	10.8	12.0	11.8	11.4	11.9	11.2	11.9	12.1

* Ratios used to run higher in the 'twenties than in the 'thirties.

An additional strain on the money market was caused by the increased demand for credits owing to reduced working hours and the congestion on the railways, which slowed down turnover. By the end of February, 1920, banks were reported to be exercising discrimination and to be rationing credits.¹ The bank rate was, however, not raised until the boom was well under way: in November, 1919, from 5% to 6%, and in April, 1920, from 6% to 7%. It remained at the 7% level far into the depression—until March, 1921. The other short rates moved similarly, though the discount rate rose somewhat earlier and turned downwards in the autumn of 1920.

There are no indications that, in the process of deflation that set in in the spring of 1920, the policy of the Bank of England constituted a material factor—though the Bank was in favour of a policy of “gradual deflation.”² In fact, the banks did not pursue a stringent policy of credit restriction.³

7. *The revival.*

A definite revival is noticeable from about the middle of 1922. By that time, wholesale prices had been stable for half a year, and the cost of living had reached its lowest point. A notable increase can be observed from the middle of 1922 in the activities of the iron and steel industries and the collieries. The textile and food industries, after a sharp depression in the middle of 1921 (partly under the influence of strikes) and a subsequent temporary revival in the second half of 1921, again showed a tendency to improve during the first half of 1922 (Diagram II). The

¹ *The Economist*, February 28th, 1920.

² See the Report of the Cunliffe Committee on Currency and Finance.

³ Cf. H. W. Macrosty, “Inflation and Deflation in the United States and the United Kingdom,” *Journ. Roy. Stat. Soc.*, 1927.

unemployment percentage among trade-union members fell by three points from April to December 1922 (17.0 to 14.0) and by about four points among all insured workers during the year 1922 (16.0 to 12.2).

It will be seen from Diagram IV that the revival in exports preceded and, presumably, had a causal influence on, the improvement in industrial activity.¹ If we disregard the steep fall in both exports and production in the second quarter of 1921, which to a great extent is to be attributed to the coal strike, we find that exports reached their lowest point in the third quarter of 1921. A sharp recovery occurred in the following quarter. In that same quarter, industrial activity touched bottom and its improvement in 1922 and 1923 lagged behind that of exports.

For the United States, the recovery starting in 1921 was the beginning of a long period of expanding trade, punctuated by only minor fluctuations, which culminated in an unprecedented boom in 1929. There was no comparable phenomenon in the United Kingdom. The level of production in the years 1923-25 was only a little higher than in 1922, the year when recovery began. Comparison of the production indices for the United States and the United Kingdom on the basis 1920=100 shows how far the latter lagged behind:

	<i>Industrial Production Indices</i> (1920 = 100)					
	1920	1921	1922	1923	1924	1925
(1) United States	100	77	97	117	109	121
(2) Idem, first 3 quarters of 1920 = 100*	96	74	94	113	105	117
(3) United Kingdom	100	72	85	87	95	96
(4) Percentage excess of index (2) over index (3)	-4	3	11	30	10	22

* Since the downturn in industrial activity in the last quarter of 1920 was far more rapid in the United States than in the United Kingdom, a better comparison may perhaps be obtained by taking the first nine months of 1920 as the base period for the former country.

The incompleteness of the recovery in the United Kingdom is also obvious from the fact that unemployment remained high,

¹ In this connection it should be taken into account that the quarterly production index is constructed in such a way as to "indicate the volume of production in the immediate future rather than in the quarter to which the figures used apply". (London & Cambridge Economic Service, *Special Memorandum* No. 8, page 11.)

averaging about 11% for all insured workers from 1923 to 1925. This average may be taken to represent some 1,300,000 persons in search of work.

Neither industrial output nor industrial employment gives an adequate picture of the expansion in the United States as compared with the United Kingdom. The former country enjoyed a great building boom in these years, as well as an enormous expansion of the service industries. In the United Kingdom, on the other hand, there was no building boom in spite of the building shortage of the war years—such a boom, indeed did not come till the 'thirties; and the generally depressed state of industry did not bring forward a demand for services on anything like the American scale.

Since the lack of building activity may be considered as one of the causes of the unsatisfactory development of industrial production, it may be well to consider the factors influencing building in the years immediately after the war. As will be seen from the following figures, residential construction was almost at a standstill in 1917 and 1918 (at an average of perhaps 3% of 1911-14, if account is taken of the rise in prices).

Value of Building Plans Approved
£ (000,000's)

	<i>Houses</i>	<i>Factories</i>	<i>Other</i>	<i>Total</i>
1911-14, ave.	5.8	2.9	6.2	14.9
1915	2.9	3.7	3.9	10.1
1916	.9	3.6	2.8	7.2
1917	.4	3.9	2.6	6.9
1918	.2	3.3	3.0	6.5
1919	7.7	10.9	11.9	30.5
1920*	25.9	13.1	23.7	52.7

* Fourth quarter estimated as equal to third.

As a result, there was a severe housing shortage at the end of the war, which was conservatively estimated at half a million dwellings. Nevertheless, private building without State assistance remained on a low level during the first post-war decade, at an annual average of 45,000 dwellings or about half the pre-war number. This absence of a boom in private building in the face of a large shortage seems to be attributable to the low profit-

ability of building.¹ Rents were kept down by control,² whereas building costs and interest rates were uncontrolled and high. Houses built in 1919 and 1920, for instance, and rented at the rentals then prevailing, would show a loss on the capital invested of 2.6% and .3% *p. a.* respectively.³

In this situation, the Government felt itself compelled to step in with a subsidy system. Though preparations had been started during the war, it was more than eight months after the war before the Housing Act, 1919, was passed. The Act requested local authorities to submit building schemes within three months. Eight months later (March 1920), only half of the authorities had submitted satisfactory schemes. At the end of 1919 another act was passed extending the subsidy system to private builders. Obviously, no building under these Acts could be started until well into 1920.

The subsidy to local authorities consisted in the Treasury undertaking to pay, for a period of sixty years, the annual deficit in their housing revenue account. Private builders were paid an outright subsidy. When the scheme was initiated, building costs were on the upsurge. Local housing deficits and consequently the burden to the Treasury grew rapidly, and the subsidies to private builders became insufficient to stimulate building. The situation was met, first by an increase in the subsidy to private builders (to about 25% of the building costs), then by a very substantial curtailment of the building scheme in the spring of 1921. The original plan for 500,000 houses in three years was cut down to 216,000—the number which by that time had been finished or were in course of construction, or for which tenders had been approved. This retrenchment formed part of the Government's general economy drive. As such, it came at an unfortunate moment, inasmuch as unemployment was increasing rapidly. On the other hand, and perhaps partly owing to the reduction in the subsidy, the cost of building fell by half in little more than a year from that date.

It was fortunate from a cyclical point of view that, owing to the extremely slow progress of the scheme during the first two years, a considerable part of the expenditure under the plan was made after the trade boom had turned. According to the table

¹ Cf. in connection with this and the following paragraphs: League of Nations, "Urban and Rural Housing" and International Labour Office, "European Housing Problems since the War, 1914-1923".

² In 1930, only 10% of the dwellings had as yet been decontrolled.

³ J. Tinbergen, "Statistical Testing of Business Cycle Theories," Vol. I, page 158. (League of Nations, Geneva 1939).

below there was a lag between plans submitted and tenders approved varying between 3 and 6 months. On February 1st, 1921, fewer houses had been finished than the number of plans submitted 19 months previously. When the scheme was curtailed only some 40,000 houses had been finished and about 80,000 were then under construction.

Number of Houses (000's)

	<u>Plans Submitted</u>	<u>Plans Approved</u>	<u>Tenders Approved</u>	<u>Finished</u>
1919 March 31st*	7	2	-	.
June 30th*	19	9	1	.
September 30th	38	24	.	.
December 31st	85	68	19	.
1920 March 31st	173	161	88	.
June 30th	225	211	119	.
September 30th	261	245	147	.
1921 February 1st	.	.	.	11
July 14th	.	.	216	about 40

* Previous to passing of Act.

The slow execution, after a late inception, of the scheme was partly due to administrative difficulties. But even after tenders had been approved, it was difficult to start actual building owing to a great shortage of building labour.¹ Only in 1924 did the building unions relax their admission requirements in return for an undertaking on the part of the Government to continue building subsidies for fifteen years.

It must not be assumed from this digression that building constituted the only or indeed the main cause of the difference in development between the United States and Britain. Another factor was the decline of Great Britain's share in world trade. This decline, however, had been taking place for many decades before the war so that the serious consequences by which it was accompanied after the war should not entirely be attributed to changes which the war brought about, though the war greatly intensified overseas competition in certain industries. This is not the place to enter into the causes of the relatively slow adaption of British industry to the changed post-war conditions—an adaptation which was rendered at once more difficult and

¹ On March 31st, 1921, contracts had been signed for 161,000 houses of which only 98,000 had been commenced.

more indispensable by the long drawn out deflationary effects of the return to the gold standard at the old parity.

8. *Policy.*

The situation which was allowed to develop in 1919—freedom of industry and foreign trade from governmental control, reduced taxation and free spending by the Government, exceptional liquidity of the banking system (itself the after-effect of war finance)—left the way open for a rapid stock accumulation boom. The import of raw materials was, of course, desirable where it served to adjust domestic to world prices, or promoted the re-employment of labour and capital which were idle for lack of raw materials. In fact, however, part of the heavy imports was destined for stocks, either required to restore a normal working level or acquired because price rises were anticipated. The additional imports to build up speculative stocks contributed to the world rise in prices and depressed the pound sterling.

Prices showed a tendency to flag in the first months after the Armistice; from the middle of 1919 they rose rapidly as a result of both the scramble for commodities on the world markets and the fall of sterling. The Government tried in various ways to curb those price movements. Its major weapon to affect the course of prices consisted in the stocks which it owned or controlled at the end of the war. A considerable part of these stocks consisted, however, of semi- or fully-manufactured goods of a specialized nature. The stocks of raw materials and leather at the disposal of the Government are shown in Table X.¹

In the early months after the war, these stocks were deliberately held back from the market in order to prevent a severe slump of prices. In fact, the stocks of lead and leather were increased, the latter to take advantage of a temporarily favourable price situation in the United States. In March 1919, the Minister of Reconstruction declared² that the official policy was to use sales of surplus materials for the purpose of bringing down market prices to what was supposed to be the normal post-war price level, as calculated on the basis of the new level of wages, fuel prices, transportation costs, etc. Sales were not in any case to be made at a price higher than the lowest estimate of replacement cost, and where it seemed necessary for the maintenance of

¹ The stocks of foodstuffs have already been mentioned. Except in the case of meat, it appears that these stocks were not used for purposes of price control. The commodities of which large stocks were available were quickly decontrolled; the prices of others, like cereals and sugar, could be controlled directly.

² House of Commons, March 10th, 1919.

Table X—U. K. Government Stocks Compared with Normal Consumption

Commodities	Date (Stocks)	Approximate			Value of Government sales 1919/20 £ m.
		Stocks Metric tons (000's)	Normal annual consumption metric tons (000's)	Stocks in months of consumption	
I. Textile materials, etc.					
Colonial Wool	March 31, 1919	50	365 ²	15	144.2
Domestic Wool	"	22	61 ³	4	7.6
Flax ¹	"	20	75 ²	3	4.2
Jute ¹	"	40	334 ²	1½	2.8
Hemp ¹	"	9	130 ²	1	1.2
Cotton ¹	"	1	95 ²	-	1.3
Kips & hides	"	50	67 ²	9	9.2
Leather	"	15	63 ²	3	<u>7.8</u>
Total, I ⁹					179.4
II. Metals					
Copper	Jan. 1, 1919	250 ⁴	} 93 ⁷	32	} 31.4
	Jan. 1, 1921	160 ⁵			
Lead	Jan. 1, 1919	64 ⁶	} 181 ⁷	4	
	June, 1919	120			
	Jan. 1, 1920	60			
Zinc	Jan. 1, 1919	31	} 134 ⁷	3	
	Jan. 1, 1920	20			
"Ferrous metals"	Jan. 1, 1919*	1,500	8,200 ⁸	2	<u>7.5</u>
Total, II					<u>38.9</u>
Grand Total					<u>218.3</u>

* Approximately.

¹ Stocks exhausted by March 1920.

² Average imports 1909-1913.

³ Average production 1909-1913.

⁴ Of which scrap: 170.

⁵ Of which scrap: 140.

⁶ Includes private stocks, amount unknown but probably small.

⁷ Average of consumption in 1919, 1920 and 1923 (excluding two depression years 1921 and 1922).

⁸ Average of steel production in 1919, 1920 and 1923.

⁹ Including small miscellaneous group.

SOURCES: I. *Raw Material Trading Accounts*, Cmd. 788. This source gives only the value of stocks (at cost); quantities have been calculated by dividing by the average 1918 import price (for home wool, the price paid to farmers).

II. London and Cambridge Economic Service, *Special Memorandum* no. 1. *The Economist*, Commercial History of 1919 and 1920. Yearbook of the American Bureau of Metal Statistics. *Disposal of Surplus Government Property*, Cmd. 850.

employment, issues to manufacturers were to be made at still lower prices. In the middle of 1919 it appeared that this policy benefited manufacturers and traders much more than the consumer, and selling prices were fixed from then on at the full market value.¹ The rise in raw material prices during the next year enabled the Government to liquidate a large part of its stocks at prices which showed a profit over costs.

Raw wool, hides, copper and lead were the only raw material stocks in government hands of really major importance, though the holdings of leather, flax and zinc amounted to about 3 months pre-war consumption. During the 12 months ending March 1920, all sales of Government surplus property totalled £352,000,000, of which raw materials accounted for £218,000,000 (62 per cent). The largest items were wool (£152 m.), non-ferrous metals (£31m.) and hides (£9 m.). The only raw material stocks remaining after March 1920 were wool, Indian kips, leather and copper.

Copper prices continued to run low after the war owing to the enormous stocks (about one year's world supply) held by various governments at the beginning of 1919. Lead prices were equally depressed in the first half year after the war, but then "active speculation set in on a satisfactory decrease in Government stocks."²

Neither the volume of stocks nor the price policy pursued in disposing of them after the middle of 1919 were such as to have exercised any considerable stabilizing influence on prices.

It would seem, however, that the Government actually effected a considerable stabilization of the price of meat by the use of its stocks, (cf. Table IV) prices being kept approximately stable from the Armistice to the end of 1920. The 73% rise in sugar prices must be attributed to causes outside British control. The British Royal Commission on Sugar Supplies and the American Equalization Board had jointly controlled the world sugar supplies during 1918 and 1919. In the middle of 1919 these agencies failed to purchase the entire Cuban crop at a favourable price owing to insufficient authority being given to the American Board, and prices rose rapidly under the impetus of speculative demand. The Sugar Commission nevertheless acquired supplies at relatively advantageous prices; a temporary import prohibition was imposed and the sugar ration reduced from 8 oz. to 6 oz. per week from January to March 1920. By these measures the

¹ *Raw Material Trading Accounts*, Cmd. 788, page 9.

² *The Economist*, Commercial History of 1919.

TABLE XI

Highest Price, Middle of 1919 to End of 1920, as Percentage Increase or Decrease (—) over Price of October 1st, 1918.

<i>Commodity</i>	<i>Highest Price Month and Year</i>	<i>Percentage Change from Oct. 1, 1918</i>
<i>Cereals and Meat</i>		
Potatoes	July 1920	97
Flour	Oct., Nov., 1920	94
Barley	Feb. 1920	81
Wheat, Foreign	Nov. 1920	41
Rice	Dec. 1919	31
Oats	July, Aug., 1920	30
Wheat, English	Sept. 1920	25
Mutton	Nov. 1920	13
Beef	Sept., Nov., 1920	7
Pork	Oct. 1920	2
<i>Other Foodstuffs</i>		
Sugar	June to Oct. 1920	73
Tea	Nov. 1919	34
Butter	Nov. 1920 — on	33
Coffee	Apr., May, 1920	21
Tobacco	July 1918 — on	0
<i>Textiles</i>		
Cotton, Raw, Egyptian	Mar. 1920	215
Flax	July to Oct. 1920	160
Silk	Feb., Mar., 1920	146
Jute	Sept. 1919	71
Wool, Raw, Australian	Apr. 1920	68
Cotton, Raw American	Mar. 1920	28
Cotton Cloth	Mar., April, 1920	24
Cotton Yarn	Mar. 1920	12
Wool, Raw, English	Apr. 1920	9
Hemp	Mar. 1920	—20
<i>Minerals</i>		
Pig Iron	Oct. 1920 — on	136
Steel Rails	Jan. 1921	133
Iron Bars	July to Dec. 1920	103
Lead	Mar. 1920	83
Coal, House	June 1920 — on	55
Coal, Steam	June 1920 — on	29
Tin	Mar. 1920	19
Copper	Mar. 1920	9

Miscellaneous

Oils	Apr. 1920	89
Crystals	Apr. to Sept. 1920	83
Seeds	Mar. 1920	75
Indigo	Feb. to Nov. 1920	41
Leather	Mar. 1920	32
Petroleum	Oct. 1920	27
Timber, Baltic	Apr. '17 to Oct. '20	0
Timber, American	Apr. '17 to Oct. '20	0
Rubber	Jan. to Mar. 1920	—19
Tallow	Aug. 1919	—21

SOURCE: *The Economist*, Commercial History of 1918, 1919, and 1920.

Commission was able to break the sugar boom. As a result, the wholesale price of sugar in the United Kingdom in 1920 was about 25% below that in the United States if the difference in duty is taken into account.

The boom was allowed to get well under way in the second half of 1919 before the restraining influence of the bank rate was employed. After the unpegging of the exchange in March of that year, the price rise rapidly outran the movement in the United States; but it was not until November that the bank rate was raised, to 6%, and by the time that it was raised again in April 1920, to 7%, the whole situation had become patently unsound. The rate of the Excess Profits Duty was halved during the boom (from 80% to 40%) and raised again (to 60%) at the beginning of the depression.¹ Public expenditure followed a cyclical, rather than an anti-cyclical pattern, and public revenue an anticyclical, instead of a cyclical pattern; the four quarters of 1919 showed a considerable deficit (£580 million for the whole year) and the depression year, 1920, was the first to show a net surplus (*cf.* Table III). The Government's major financial concerns were to balance its budget after the long period of war deficits and to fund as large a proportion as possible of the public debt. This was effected in such a manner as to counteract the direct effects of the surpluses and deficits, but involved a postponement of the utilization of interest rates as an instrument to control cyclical movements.

The Government did not conceive of the budget as an instrument of cyclical policy, except insofar as subsidies were employed

¹ It should be noted that when the 1919-20 budget was introduced, the Chancellor of the Exchequer expected a fall in prices and profits; whereas, at the beginning of the financial year 1920-21, the increase of the rate was thought justified on the assumption that the post-war boom would continue. (B. Mallet, "British Budgets," 2nd Series, page 249.)

to give a stimulus to some particular branch of production or to relieve distress, and indeed in the then state of public opinion deficit financing as an instrument of cyclical policy could not have been employed. In the same way, the peak value of capital expenditure by local authorities reached in 1921 (Table II) should, it would seem, be attributed rather to the execution of plans in preparation since the Armistice than to any deliberate anti-depression policy.

9. *Consideration of policy.*

If we consider the instruments in the hands of the Government which it might have used to check the price boom and hence the rapid consequent collapse, we shall find that they were, in the then state of public opinion, at once few and of limited effectiveness. Of the large quantities of surplus stocks held by it, semi- and fully-manufactured goods constituted a considerable part, and these were often in a form unsuited for civilian use. When they were of immediate use, the Government feared, not without justification, that to dump them on the market might check enterprise and therefore impede re-employment in industries treating the raw material in earlier stages of production. When, as in the case of cross-bred wool and copper, the Government was in possession of large stocks of raw material, it did manage to restrain the upward tendency of prices. But it is nevertheless true that the Government viewed the problem of these stocks mainly as one of liquidation. That liquidation was halted when prices threatened to fall, was accelerated when prices rose. Such a policy was not incompatible with price stabilization, but price stabilization was not the first objective.

In the absence of such stocks in its own possession, the British Government was clearly much less well-placed than the American to control prices either by market operations or by legislative means. Most of the raw materials required for civilian use came from overseas. The basic principle of the Government's policy was to leave the import of raw materials and foodstuffs free, while putting considerable restrictions on the import of foreign manufactured goods. The restrictions were defended on the grounds both that they prevented unemployment and that they protected the value of the currency. However, when industries were operating at full capacity, the validity of the second argument clearly became more open to doubt. The effect of imports might well have been to improve the exchange by lowering the domestic price level; it was indeed contended that the mere pos-

sibility of import would bring national prices down sufficiently to make actual imports unnecessary.¹

In the case of foodstuffs, the Government did take action to keep down prices by increasing the supplies made available to the market. Thus, the Ministry of Food made a prior claim for shipping space for food so as to prevent food prices from rising above the world price level.² Similarly, freedom of imports was asked to break the monopolistic price policies of certain trade associations which had grown strong during the war.

If it had controlled imports of crude products in order to check the speculative accumulation of stocks, it might have exercised some influence on the trend of world prices; but this action by itself might have increased prices on the home market above the levels they actually reached. If it had confined its action to controlling domestic prices, it would have incurred the risk of preventing importers from obtaining the raw materials industry really required. This actually happened in the case of bacon. It would therefore have had to control both imports and domestic prices to prevent domestic prices from rising above the world level. This might have been effective in checking the price boom to the extent that that boom was due to the demand arising on world markets from speculative purchases for stock by British firms. How important this single factor was it is quite impossible to judge. But there is no sort of reason for assuming that it was the determining factor in world markets in the period considered. It is, indeed, obvious that effective action to prevent the price boom would have required not simply close collaboration with the United States of America, but the elaboration and execution of a concerted policy. The United States Government was in no mood to carry out any such policy. On the contrary, it abolished its own control lock, stock and barrel at the earliest possible opportunity. To some extent it was driven to do so. Thus, Sir Arthur Goldfinch records in his 1920 report that: "At the urgent request of the United States authorities an agreement to set up a Leather and Hides Executive was signed in November 1918 by the Governments of this country, of the United States of America, of France, and of Italy, but the revolt against government control on the part of American businessmen after the Armistice was so widespread and so violent that it immediately became evident that the International Control of Raw Materials was impossible and the Hides and Leather Executive was aban-

¹ *The Economist*, March 15th, 1919.

² Beveridge, *op. cit.*, page 284.

done.”¹ It is at least open to question whether public opinion in England would have tolerated a continuance of control. The intensity of the post-Armistice relief at the prospects of the death of Dora² and the insistence on her execution are too often forgotten. If, in fact, a concerted policy had been desired, it would have been indispensable to have elaborated that policy before the end of the war and have made sure of public support in advance. One amongst many reasons why this was not done was that the Government and its advisers were uncertain whether the war was likely to be followed by a boom or a slump, by rising or falling prices.

Even if the Government had been quite clear in its own mind about the probable nature of immediate post-war economic forces and about the policy it wished to apply to them, the state of public opinion at home and abroad would have set strict limits to effective action.

Theoretically, the Government might have endeavoured to stabilize domestic prices by appreciating the pound sterling or checking its depreciation; it might have brought its influence to bear in support of a more restrictive credit policy in the early stages of the boom; it might have tried to restrain the exercise of monopolistic powers by certain trade unions in skilled occupations. But actually, it required low money rates to effect its conversion operations and it wished to stimulate exports. Fearing a slump in wage rates immediately after the Armistice, it passed a Wages (Temporary Regulation) Act in November 1918 stipulating that hourly rates in effect on November 11th, 1918, should constitute the minimum rates for six months after the Armistice, and renewed this Act twice up to September 1920. Minimum but not maximum rates were enforced even when the risk became an inflationary rise, and these minima were removed when the danger was a fall in wages and other prices. The timing of this policy would appear, in the light of what actually happened, to have been unfortunate. But, as stated above, there was great uncertainty about what was likely to happen—whether the Armistice would be followed by a boom or a depression. The one major concern was to create a situation in which the demobilized men might find employment readily at the most favourable possible wages. To jeopardize the export trade by raising—or artificially maintaining—the exchanges, or to check enterprise by monetary policy was not considered politically

¹ Cmd. 788.

² Defense of the Realm Act.

practicable. To exacerbate labour by attacking its accepted privileges and violating the agreements concluded during the war was clearly impossible.

The Government's fear of the temper of the men seeking employment and its genuine desire to do all in its power for the demobilized soldiers explains, too, a certain lack of logic in its policy in maintaining rent control when other controls were abolished. This no doubt checked building recovery, while its subsidies to building would seem to have helped to increase building costs. As pointed out in Part I of this study, one difficulty in post-war price control lies in the fact that if only raw material prices are controlled and not the thousand and one finished goods into which each is manufactured, the main effect may only be to give undue advantage to processors and manufacturers. In the case of houses, however, when the bulk of the supply is already on the market, the reverse policy was pursued by almost all governments; the price of the finished article was controlled and not the price of the raw materials that go into its making. Certain of these raw materials at least—bricks and cement—almost universally domestic products, were relatively easy to control. By controlling rents alone, private building was effectively prevented; by subsidizing building without controlling the prices of building materials, certain firms were given an opportunity for undue profit. But such undue profit might have been avoided. If the Government, by its action in controlling rents, had greatly curtailed the market demand for, for instance, bricks and mortar, the substitution of its own demand for what it had killed need not have had an abnormal influence on prices. That it did so in certain cases would seem to be due in large part to the extreme localization of the industry and the existence of local monopolies, which might have been controlled.

The Government might possibly have exercised some indirect influence on prices also had it continued to collect statistics of stocks of raw materials and published its results. There would have been considerable opposition to such a course, not only on account of the cost to firms of the work involved, but because many businessmen held the view that such publicity tended to accentuate a rise in prices when stocks were light and a fall when they were heavy. This belief in the steadying influence of ignorance does not seem to be supported by either evidence or logic. But, at best, the influence of such a measure on the world market movements which determined the boom in England would

have been limited. These world movements could, as stated above, only have been controlled by international action concerted before the end of the war and loyally executed.

10. *Conclusions.*

1. The Armistice was not followed by a slump, but after a quite brief period of disorganization by an extremely rapid boom. The period of unemployment resulting from the demobilization on the one hand and the need to convert machinery from war to peace requirements on the other only lasted for a few months and towards the autumn of 1919 there was a state of almost full employment of available resources.

2. This very rapid restoration of economic activity was due to the release of consumers' demand which had been pent up by rationing, priorities, etc., during the war, and to the demand for the adaptation of plant and rather later for the replacement of worn out machines.

3. As measured by the employment statistics, the demand for consumers' goods would seem to have increased earlier (spring of 1919) than the demand for producers' goods, which did not rise much before the spring of 1920.

4. Employment recovered most rapidly in the food and cement industries—and in coal mining where it was, however, affected by strikes. It fell off first in food and ready-made clothing (spring 1920), and in textiles (summer 1920). Not until December 1920 did it fall off in the heavy industries, nor until the spring of 1921 in coal mining and cement. This is roughly the order that, on theoretical grounds, might have been expected.

5. The release of consumers' demand, to become effective—that is, to allow physical needs to express themselves in actual purchasing power—implied some measure of inflation.

6. The market after the Armistice was in fact very liquid, and the public tended to show a preference for equity investment.

7. The need of the Government to convert its floating debt made it difficult to curtail the boom which resulted from these various circumstances and tendencies by stiffening rates of interest.

8. The boom was in fact carried beyond the point of optimum economic activity and approximately full employment of resources, and developed into an inflationary price boom. The index of wholesale prices rose 25% between October 1918 and April 1920 and many individual prices reached peaks of 50%

and more in excess of their level at the end of the war at various dates in the latter half of 1919 and in 1920.

9. This boom in prices was accentuated *inter alia* on the supply side by lack of skilled labour in certain industries, initial transport difficulties, and coal shortages (caused in part by strikes) and on the demand side by speculative purchases of raw materials for stock which contributed to the fall in sterling, by the overseas demand for British goods, and by the widespread feeling of relief at the abolition of control and speculative optimism. It was rendered possible by the liquidity of the market, soldiers' bonuses, reduction in taxation, etc.

10. There was a close correlation between productive activity and the quantum of exports (with a notable exception in 1919 when the domestic boom carried production to a relatively high level, notwithstanding low exports), the boom in prices favourably affecting the purchasing power of the raw materials producing countries.

11. But even in 1920 the quantum of British exports of manufactured goods was only 76% of what it had been in 1913 and the quantum of total exports only 71%.

12. Rent control prevented any recovery in private building in spite of the severe housing shortage. Preparations started by the Government during the war to stimulate building did not lead to any substantial results until the spring and early summer of 1920.

13. The price boom led inevitably to a subsequent collapse in 1921 and serious unemployment.

14. The major problem of the transition from war to peace economy therefore proved itself to be not one of getting demobilized men and machines re-employed, but one of the cyclical effects of the perhaps unavoidably bumpy nature of post-war pent-up demand.

APPENDIX I

FIGURES USED IN DIAGRAMS IN PART I

Diagram 1

1. Industrial Production

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1918	66	70	78	80	82	81	84	81	82	77	76	78
1919	71	68	66	67	67	72	76	77	75	75	74	75
1920	82	82	81	76	78	79	76	77	74	72	66	62
1921	58	57	55	55	57	57	56	58	58	62	61	61
1922	63	65	69	67	70	74	74	72	76	80	84	86

2. Production of Durable Manufactures

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1919	89	88	83	78	72	82	89	94	84	80	84	84
1920	97	100	98	87	93	97	96	99	97	93	83	77
1921	65	60	53	50	51	48	45	50	50	56	57	55
1922	58	62	68	78	82	87	89	78	82	91	93	98

3. Production of Non-Durable Manufactures

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1919	56	53	53	57	61	63	64	64	66	67	68	67
1920	69	68	67	66	66	63	60	58	56	52	47	44
1921	47	49	52	54	56	58	55	60	60	62	61	61
1922	62	62	63	61	64	67	67	69	69	70	73	74

4. Factory Employment

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1919	109	105	104	104	105	107	109	111	112	112	114	117
1920	119	117	118	117	114	113	110	109	106	103	97	90
1921	82	84	85	84	84	83	82	82	83	84	85	85
1922	85	87	88	88	90	92	93	94	95	97	100	102

Base: 1935-9 = 100

Source: 1: 1918: *Standard Statistics*

1: 1919-22: 2,3,4: Federal Reserve Board.

Diagram 2

1. Production of Passenger Motor Cars

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1916	56	54	68	61	64	59	54	50	63	62	71	71
1917	66	69	69	68	76	72	73	66	70	74	77	61
1918	51	49	46	50	47	40	44	35	18	16	25	37
1919	51	51	50	55	62	61	67	71	73	87	91	83
1920	92	81	81	55	73	82	85	88	75	68	72	65
1921	41	35	34	46	53	74	78	85	68	67	68	56

2. Cotton Consumption

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1916	100	110	116	105	112	114	103	114	111	110	116	110
1917	112	111	114	107	120	115	113	116	110	116	118	106
1918	96	104	108	105	112	103	114	109	104	88	91	97
1919	103	89	80	92	94	95	108	102	104	111	98	105
1920	110	105	108	110	105	111	111	99	98	80	66	62
1921	65	81	81	78	85	93	87	96	103	99	105	105

3. Woollen Mill Activity

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1916	107	109	110	111	112	112	111	110	109	108	107	109
1917	110	112	113	115	117	117	113	113	110	106	107	110
1918	109	111	113	117	119	116	116	118	101	93	81	67
1919	57	48	55	65	87	104	116	106	107	103	105	112
1920	116	109	109	111	92	81	76	71	69	63	58	45
1921	46	62	72	89	96	104	100	102	104	104	104	103

Base: Trend Value, January 1, 1923 = 100

Source: *Standard Statistics*.

Diagram 3

Employment

1. Automobiles

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov. 92	Dec. 93
1915	.	.	.	.	.	.	.	.	.	.	.	.
1916	93	104	106	104	105	101	108	108	114	122	120	116
1917	123	124	125	123	120	116	110	112	116	117	113	112
1918	110	110	114	115	115	116	113	109	111	112	114	106
1919	100	101	104	108	111	115	120	125	134	134	134	132
1920	137	140	140	139	134	134	132	122	115	101	90	85
1921	42	53	64	81	85	81	81	82	82	81	78	74
1922	72	78	84	90	100	107	110	112	112	110	112	114

2. Furniture

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1915	98	104	103	105	106	103	97	104	109	109	110	113
1916	114	116	118	115	112	112	111	116	118	116	121	127
1917	125	126	128	122	118	115	116	114	112	113	115	115
1918	115	112	112	106	105	104	106	104	101	96	97	98
1919	100	103	106	107	110	107	111	116	118	122	126	129
1920	127	127	127	127	125	126	126	126	126	124	118	111
1921	89	95	99	101	100	100	100	100	99	101	107	110
1922	110	112	115	114	114	115	115	118	121	126	130	134

3. Boots and Shoes

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1915	92	92	88	81	83	84	85	86	86	95	99	115
1916	105	105	106	104	103	104	105	104	103	103	107	113
1917	114	114	113	111	109	111	107	102	96	98	106	106
1918	106	107	108	104	102	101	103	101	100	94	97	100
1919	100	100	98	96	98	98	99	101	102	104	106	108
1920	110	108	109	107	104	99	90	88	79	77	74	73
1921	71	79	82	82	85	87	89	93	93	91	89	91
1922	93	93	92	87	87	89	93	97	100	101	103	105

4. Textiles

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1915	101	104	103	105	108	107	108	105	109	114	114	115
1916	118	120	118	120	112	116	117	111	114	116	120	123
1917	127	124	125	122	120	118	117	112	114	114	114	115
1918	113	115	116	115	114	113	115	113	110	98	104	105
1929	100	95	97	101	106	109	113	114	116	118	118	120
1920	122	121	123	122	120	116	107	105	104	100	89	80
1921	78	96	98	101	102	103	104	105	110	111	109	108
1922	108	111	107	103	102	101	101	104	108	111	113	116

5. Men's Clothing

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1915	.	129	121	105	124	125	128	110	105	111	116	107
1916	132	129	132	128	134	138	138	128	122	125	133	121
1917	141	141	145	145	149	155	149	142	136	133	137	141
1918	134	138	133	133	133	133	134	129	124	113	112	109
1919	100	105	106	109	111	117	125	125	131	136	144	136
1920	138	140	146	148	148	144	138	131	124	109	89	69
1921	76	94	100	106	105	114	124	131	130	129	125	128
1922	128	128	128	116	115	122	126	126	128	128	126	134

6. Silk and Rayon

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1915	115	118	118	114	114	114	113	115	116	119	123	124
1916	127	123	127	128	125	127	128	127	125	127	124	127
1917	127	125	124	123	120	118	118	115	113	111	111	111
1918	109	111	113	111	110	110	108	105	100	100	96	97
1919	100	97	100	108	111	108	111	112	105	108	114	117
1920	119	119	117	120	120	117	110	106	102	101	98	91
1921	86	91	98	102	104	106	108	106	110	110	108	108
1922	108	108	108	100	97	95	94	92	96	98	101	104

7. Iron and Steel

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1915	54	52	57	59	60	62	64	66	68	71	71	71
1916	74	75	77	76	79	80	81	83	85	85	86	87
1917	90	90	91	91	93	95	96	99	98	99	100	100
1918	99	99	101	100	101	102	101	101	101	101	99	101
1919	100	95	92	87	85	86	92	95	95	84	93	98
1920	102	103	105	104	98	101	101	99	100	98	94	84
1921	68	71	68	62	62	57	51	54	56	61	65	65
1922	62	66	68	73	75	79	80	81	81	85	88	90

8. Machinery

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1915	60	63	62	63	66	67	68	67	70	56	76	80
1916	81	85	87	89	91	91	91	90	92	93	98	99
1917	98	99	100	99	99	101	100	102	102	104	105	104
1918	111	113	114	112	113	116	117	112	110	105	112	108
1919	170	98	94	94	91	89	89	94	98	101	105	108
1920	112	110	112	111	109	110	111	108	106	102	98	92
1921	85	79	75	70	65	62	57	56	55	55	55	57
1922	59	59	62	64	66	66	66	67	72	74	77	81

Base: January 1919 = 100

Source: 1915-1918: 1,3,5,6,7 = *Monthly Labor Review*, 1919 I, p.1412/3

2,4,8: New York State Department of Labor, Special Bulletin No. 113, Sept. 1922. (Data for New York State only.)

1919-1922: 1-8: United States Bureau of Labour Statistics Bulletin No. 610.

Note: For furniture, textiles and machinery, figures for the United States start in January 1919. Earlier data are for New York State only. These show a high degree of correlation with the nation-wide figures over 1919/30.

Diagram 4
Prices

1. Wholesale, all commodity

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1915	68	69	68	69	69	68	69	68	70	72	74	74
1916	77	79	80	82	83	83	83	85	87	91	97	99
1917	102	105	108	114	121	122	123	125	124	122	123	123
1918	125	123	126	128	128	129	132	134	138	136	136	136
1919	134	130	131	133	135	136	141	144	141	142	145	151
1920	158	157	159	166	167	167	166	161	155	144	133	121
1921	114	105	102	99	96	93	93	94	93	94	94	93

2. Wholesale, textiles

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1915	51	51	52	53	53	53	53	54	55	57	58	60
1916	63	65	66	67	67	67	69	72	72	76	79	83
1917	84	84	85	88	92	97	103	107	107	109	113	117
1918	122	124	129	136	138	142	143	143	145	145	143	139
1919	127	119	114	114	120	131	140	144	145	149	157	165
1920	187	194	193	195	188	181	169	161	145	132	122	114
1921	102	96	93	92	91	92	91	90	95	97	97	98

3. Cost of Living

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1915	99	98	97	97	98	97	98	98	98	100	100	100
1916	102	103	103	105	105	107	107	107	109	110	113	114
1917	117	118	120	123	126	130	129	130	133	137	139	141
1918	146	148	148	147	151	155	158	161	165	168	169	170
1919	172	169	169	171	173	174	176	180	180	188	193	195
1920	203	203	204	210	211	211	212	206	207	205	204	195
1921	191	183	182	179	177	174	175	176	174	174	173	172

4. Industrial Stock Prices

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1915	39	39	41	46	46	47	50	55	59	64	65	67
1916	66	65	65	62	63	63	61	63	68	71	75	68
1917	67	63	66	65	65	67	64	61	58	55	50	49
1918	55	56	54	54	56	56	57	53	57	59	60	60
1919	60	61	63	67	72	76	80	75	77	83	80	78
1920	77	69	74	75	69	68	67	62	64	62	57	52
1921	55	54	53	53	53	49	48	47	48	49	53	56

5. Rediscount Rate of 12 Federal Reserve Banks (Unweighted average)

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1915	.	.	.	.	4.50	4.50	4.50	4.43	4.37	4.24	4.19	4.17
1916	4.17	4.17	4.17	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21
1917	4.25	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.56
1918	4.62	4.63	4.63	4.75	4.78	4.84	4.86	4.85	4.85	4.85	4.85	4.85
1919	4.84	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83
1920	5.06	6.00	6.00	6.00	6.00	6.33	6.33	6.33	6.33	6.33	6.42	6.42
1921	6.42	6.46	6.50	6.44	6.21	6.21	6.00	3.84	5.79	5.67	5.04	4.99

Base: 1-4: 1926 = 100. (5: Actual percentages).

Source: 1-2: United States Bureau of Labor Statistics.

3 : P.H.Douglas, *Real Wages in the United States*, page 57.

4 : Standard Statistics.

5 : Standard Statistics.

Diagram 5

1. Residential Construction

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1919	22	30	41	59	85	114	127	123	111	92	78	61
1920	54	48	50	53	52	45	44	43	44	37	31	27
1921	31	38	44	50	60	65	72	83	89	89	84	84
1922	83	83	85	92	103	111	114	111	106	104	102	106

2. Non-Residential Construction

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1919	70	72	83	102	145	180	210	199	215	224	259	258
1920	254	238	206	169	141	124	114	101	91	85	69	62
1921	57	54	57	57	63	64	68	71	78	80	79	74
1922	77	84	92	95	100	106	119	117	113	101	99	96

3. Cost of Building

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1919	81	81	80	81	84	89	85	100	102	104	106	111
1920	118	124	128	128	127	124	122	120	118	113	108	104
1921	100	97	95	93	92	90	88	87	87	87	87	87
1922	86	86	86	86	87	88	90	91	93	94	95	95

4. Rent

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1919	67*	.	68	.	.	.	71	.	.	.	77	.
1920	80	80	83	84	84	84	88	88	89	89	92	92
1921	92	92	95	95	95	99	94	94	94	94	94	94
1922	94	94	92	92	92	92	92	92	92	92	93	93

* Straight line interpolation between November 1918 and March 1919.

Base: 1,2: 1922 = 100

3,4: 1923-25 = 100

Source: 1,2: F.W.Dodge data from National Bureau of Economic Research files (corrected for seasonal variation - three monthsmoving average).

3 : *The Engineering News Record* (three monthsmoving average).

4 : National Industrial Conference Board.

Diagram 6
1-3. United Kingdom Imports
cwts (000,000's)

<u>1. Wheat*</u>	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
from United States	43	42	51	72	65	50	46	54	47	43
" Argentine	15	7	12	5	7	14	7	31	4	19
" Australia	11	12	-	4	12	4	17	22	22	19
" India	19	11	14	6	3	1	-	-	3	6
	45	30	26	15	22	19	24	53	29	38

2. Maize

from United States	7	-	2	7	11	8	1	2	8	15
" Argentine	39	29	44	21	10	4	14	29	16	13

3. Chilled and Frozen Beef

from United States	-	0.1	1.0	0.9	0.9	3.6	0.9	.	.	.
" Argentine	7.2	6.0	5.1	4.0	2.7	2.0	3.9	.	.	.
" Australia & New Zealand	1.6	2.0	2.0	1.6	1.2	0.9	1.0	.	.	.
	8.8	8.0	7.1	5.6	4.6	2.9	4.9	.	.	.

*Grain plus flour in terms of grain

4. Wheat Stocks, August 1.
Bushels (000,000's)

	1909-13	1914	1915	1916	1917	1918	1919	1922	1923
(a) United States	106	110	70	226	53	21	61	107	134
(b) Canada	16	19	10	30	20	10	15	28	22
(a) plus (b)	122	129	80	256	73	31	76	135	156
(c) Argentine	27	12	23	56	15	77	114	43	40
(d) Australia	17	19	0	100	138	174	131	15	24
(c) plus (d)	44	31	23	156	153	251	245	58	64

Source: 1,2: *Statistical Abstract for the United Kingdom.*

3: *Annual Statement of the Trade of the United Kingdom and E.G.Nourse, American Agriculture and the European Market*, page 50.

4: *Food Research Institute, Wheat Studies*, XVI, pages 63,64,110.

Diagram 7

1. Controlled Prices

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1914	99	99	99	99	99	98	98	104	105	101	99	99
1915	101	102	101	101	101	100	103	103	101	101	103	107
1916	113	115	117	120	121	120	121	125	127	134	143	146
1917	151	155	164	183	192	201	209	204	203	198	200	193
1918	195	198	197	196	192	189	195	199	204	201	200	204
1919	202	196	201	206	209	.	.	.	.	.	.	.

2. Uncontrolled Prices

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1914	99	99	99	99	98	99	98	98	96	95	94	94
1915	97	97	98	99	101	102	103	102	103	106	109	111
1916	116	119	121	123	123	124	124	124	125	127	131	135
1917	140	142	142	146	149	152	160	162	163	167	172	174
1918	178	180	182	187	189	191	194	195	199	201	200	197
1919	194	190	191	187	192	.	.	.	.	.	.	.

Base: July 1913 - June 1914 = 100

Source: P.W.Garrett, *Government Control over Prices*, page 426/7 (1914-1918) and page 413 (January-May, 1919). The two indices are linked according to their average values for 1918.

Diagram 8

1. Money Wages

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1918											178	194
1919	188	185	188	186	188	192	195	202	210	211	214	225
1920	227	225	235	233	240	241	236	240	238	237	230	226
1921	211	206	209	205	207	205	.	.	.	.	.	.

2. Cost of Living

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1918											169	170
1919	172	169	169	171	173	174	176	180	180	188	193	195
1920	203	203	204	210	211	211	212	206	207	205	204	195
1921	191	183	182	179	177	174	.	.	.	.	.	.

3. Real Wages

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1918											110	110
1919	111	111	110	110	109	110	111	113	113	113	113	113
1920	113	113	112	113	113	113	114	114	116	115	115	113
1921	113	113	114	115	116	116	.	.	.	.	.	.

Base: 1914 = 100

Source: P.H.Douglas, *op.cit.*, page 240/1 and page 57 (3:three months moving average taken).

APPENDIX II

EMPLOYMENT STATISTICS FOR THE UNITED KINGDOM, 1918-1922

The following series are available (all published in the Ministry of Labour Gazette):

A. *Trade Union unemployment percentages, monthly, by industries.*

These are the oldest figures concerning employment; and they give a rough idea of the fluctuations of business. In the period under consideration, they seem to fail to give an exact picture, however, owing to:

1. The rapid change in membership of the unions;
2. The fact that the unions comprised largely skilled workers, among which employment was much better in 1919 and 1920 than among workers in general. The union percentages are, therefore, not even reliable indices for the general situation in the industries to which they refer; hence the re-weighting of these percentages according to the total number of persons employed in each industry¹ may fail to improve the representativeness of the trade union index.

B. *Unemployment insurance data, monthly, by industries.*

This series is available from 1912 on, with a break of 8 months in 1919 and of one in October 1920. The coverage of the scheme was changed various times.

1. Under the 1911 Act, it covered building, construction, ship-building, engineering, vehicles, ironfounding, and sawmilling, which industries employed 2.3 million workers in 1912.

2. Under the 1916 Act, the munitions, metal, chemical, rubber, leather, orick and some minor industries were added, bringing the total number of workers covered to 3.7 millions in 1916 and, owing to the growth of these industries, to 4.2 millions in July 1920.

3. In December 1918 a small group of "others insured under the 1916 Act" (233,000 workers) was excluded.

4. From November 1920 on, the insurance scheme covers all manual workers outside agriculture, numbering about 12 millions.

¹ See J. Hilton, *Journ. Roy. Stat. Soc.* 1923, page 154.

From 1916 to 1920, the coverage seems fairly representative of the investment industries, the numbers covered in other industries being relatively small. But, owing to the fluctuations in the number of persons attached to these industries, the unemployment index does not give a good picture of the course of employment. The investment goods industries employment index given in Diagram II has been obtained by multiplying the total number of persons insured under the 1911 and 1916 Acts (excluding for October and November 1918 the small group of "others insured")—by (1 minus the percentage unemployed.) Since the number insured is given only quarterly, an interpolated figure had to be used for the intermediate months. The series should, therefore, be taken with some caution.

C. *Employers' returns.*

A considerable sample of employers in many industries furnished monthly data concerning the number of workers employed. These figures are published each month expressed as a percentage of the number of workers employed by the firms reporting in the previous month, and in the same month last year. From the series of percentages a chain index can be constructed. The employment series for textiles, ready made clothing, food preparations and cement in Diagram II have been obtained in this way. A total is also given for "Textile and other industries" which comprises practically only consumers' goods industries, and a considerable variety of them. A chain index based on the percentages for this total has been used as the consumers' goods employment index in Diagram II.

For coal mining and the iron and steel industry, figures are also given in the employers' reports concerning the number of shifts worked per week. The employment indices for those industries in Diagram II take account of this information, and are thus to be considered as a better indication of activity since they make allowance for short time.

Some indication of the extent of short time in the other industries may also be obtained from the data on earnings published with the employment figures, provided the normal hourly wage is known. On the basis of this information, an improved employment index has been calculated for the woollen industry by Mr. G. H. Wood.¹ It shows, as might have been expected that this corrected series has wider fluctuations and earlier turning

¹ *Journ. Roy. Stat. Soc.*, 1927, II page 284.

points than the ordinary employment index. It was not possible to perform this correction in the series shown in Diagram II, except as mentioned in the preceding paragraph.

D. Out-of-work Donation.

From the Armistice till November 1919 a non-contributory out-of-work donation was given to all unemployed. Weekly figures are published for the numbers claiming this donation, both civilians and demobilised soldiers. The breakdown of the claimants by industries is not comparable with that of the unemployment insurance statistics.

APPENDIX III

FIGURES USED IN DIAGRAMS IN PART II

Diagram I

	A. Production Index, 1913:100								
	1914	1915	1916	1917	1918	1919	1920	1921	1922
Total	93	94	87	84	72	89	91	62	77
Producers Goods	91	87	89	90	87	85	91	57	73
Consumers Goods	95	101	85	78	71	94	91	66	81

Source: Hoffman, *op. cit.*

B. Unemployment

(In the diagram, the figures shown below are deducted from 100.)

		A. Production Index, 1913:100											
		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1914	U.I.	5.5	4.4	3.6	3.3	3.2	3.5	3.5	6.2	5.4	4.2	3.7	3.3
	T.U.	2.5	2.3	2.1	2.1	2.3	2.4	2.8	7.1	5.9	4.4	2.9	2.5
1915	U.I.	2.6	2.0	1.4	1.1	0.9	0.9	1.0	0.9	0.9	0.8	0.9	1.1
	T.U.	1.9	1.6	1.3	1.2	1.2	1.0	0.9	1.0	0.9	0.8	0.6	0.6
1916	U.I.	1.0	0.8	0.7	0.7	0.6	0.5	0.6	0.5	0.5	0.4 ^a	0.5	0.6
	T.U.	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3
1917	U.I.	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8
	T.U.	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	1.3	1.1	1.1	1.4
1918	U.I.	0.9	0.9	1.0	1.0	0.9	0.8	0.7	0.7	0.7	0.7	0.9	0.7
	T.U.	1.0	0.9	1.2	0.9	0.9	0.7	0.6	0.5	0.5	0.4	0.5	1.2
1919	U.I.	9.9	10.7	.	.	.	.	.	.	.	.	5.4	6.6
	T.U.	2.4	2.8	2.8	2.7	2.1	1.7	2.0	2.2	1.6	2.6	2.9	3.2
1920	U.I.	6.1	4.4	3.6	2.8	2.7	2.6	2.7	2.9	3.8	.	3.7	5.8
	T.U.	2.9	1.9	1.1	0.9	1.1	1.2	1.4	1.6	2.2	5.3	3.7	6.0
1921	U.I.	8.2	9.5	11.3	15.0 ^b	17.3 ^b	17.8 ^b	14.8	13.2 ^c	12.2 ^c	14.9	15.7	16.1
	T.U.	6.9	8.5	10.0	17.6	22.2	23.1	16.7	16.3	14.8	15.6	15.9	16.5
1922	U.I.	16.0	15.5	14.4	14.4	13.5	12.7	12.3	12.0	12.0	12.0	12.4	12.2
	T.U.	16.8	16.3	16.3	17.0	16.4	15.7	14.6	14.4	14.6	14.0	14.2	14.0

^a New Act - 1911 Act = 0.5

^b Coal Stoppage

^c Affected by exhaustion of benefits

U.I. = Unemployment Insurance percentages

T.U. = Trade Union percentages

Source: Hilton, *op. cit.*

Diagram II

Employment Indices, October 1918 = 100

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Consumers Goods												
1918	103	103	102	102	102	101	100	100	100	100	99	101
1919	102	102	104	106	109	111	113	114	117	118	120	121
1920	122	123	123	123	124	124	123	122	121	117	117	114
1921	106	104	102	92	78	77	90	95	97	98	98	97
1922	94	95	96	97	99	.	.	.	.	.	.	.
Producers Goods												
1918	.	.	.	.	.	.	.	.	.	100	101	96
1919	93	93	.	.	.	.	.	.	.	.	104	104
1920	105	111	115	118	118	119	119	119	118	.	.	.
Food Preparations												
1918	101	101	100	101	101	101	100	100	100	100	101	104
1919	105	109	115	120	125	129	135	137	141	142	145	146
1920	143	143	140	139	138	139	137	135	136	135	135	131
1921	126	126	125	124	122	126	128	132	137	137	136	133
1922	129	131	131	131	133	.	.	.	.	.	.	.
Textiles												
1918	104	104	102	102	102	101	99	100	100	100	99	101
1919	101	99	99	101	104	106	107	103	111	112	114	115
1920	116	117	118	118	119	118	118	117	116	111	112	108
1921	96	93	91	81	64	58	74	80	81	84	84	83
1922	81	81	82	83	86	.	.	.	.	.	.	.
Ready-Made Clothing												
1918	101	100	100	101	100	100	98	99	101	100	99	100
1919	98	97	96	99	101	100	103	101	103	104	102	102
1920	102	102	101	101	100	99	97	95	93	88	85	81
1921	78	76	77	76	69	71	66	68	69	67	68	67
1922	67	71	73	75	76	.	.	.	.	.	.	.
Cement												
1918	99	99	100	100	101	101	100	101	102	100	101	105
1919	108	114	123	134	141	145	151	155	159	164	170	174
1920	177	183	187	190	196	205	207	212	219	226	230	246
1921	244	239	220	190	156	147	173	183	178	158	135	131
1922	115	118	117	112	119	.	.	.	.	.	.	.
Coal Mining												
1918	98	99	101	101	98	98	97	97	99	100	95	102
1919	103	112	113	114	118	102	100	119	119	120	121	122
1920	123	123	123	125	125	124	123	124	126	.	129	128
1921	115	104	100	.	.	.	105	94	91	88	97	101
1922	101	105	103	106	97	90	92	107	107	111	113	115
*Strikes												
Iron and Steel												
1918	101	102	101	102	102	102	100	99	100	100	99	94
1919	93	94	96	97	101	100	85	95	98	92	97	100
1920	99	107	109	109	108	110	110	109	110	70	100	99
1921	85	72	63	32	13	12	53	63	63	60	56	54
1922	50	55	51	48	44	52	51	54	57	58	58	64
Working Days Lost in Strikes (000,000's)												
1918										0.3	0.3	1.2
1919	2.9	2.3	1.1	0.5	0.7	3.8	8.0	3.3	3.0	4.5	1.8	1.8
1920	1.8	0.5	0.8	0.9	1.2	1.3	0.9	0.8	1.1	13.5	3.6	0.4
1921	0.4	0.4	0.5	23.4	23.2	29.6	6.3	0.2	0.2	0.2	0.3	0.1
1922	0.2	0.3	3.4	5.8	7.2	2.1	0.5	0.3	0.1	0.2	0.1	0.1

Source. Ministry of Labour Gazette; of. Appendix II.

Diagram III
Price and Wage Indices, July 1914 = 100

	1. Wholesale Prices (Statist)											
	Jan.	Feb.	Mar.	Apr.	May	June	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1914	101	102	100	100	100	99	100	107	108	109	107	111
1915	117	122	126	129	130	129	129	130	131	133	137	144
1916	150	154	158	163	164	159	158	163	163	172	183	187
1917	193	199	205	210	212	219	215	213	214	219	222	225
1918	226	227	228	230	231	233	234	238	239	240	237	238
1919	233	228	224	224	236	242	250	258	261	272	280	285
1920	298	316	318	323	316	310	309	308	302	291	272	251
1921	239	222	215	206	197	189	192	187	181	168	166	162
1922	161	160	162	164	164	164	163	157	155	158	159	157

	2. Cost of Living (Official)											
	Jan.	Feb.	Mar.	Apr.	May	June	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1914	.	.	.	.	.	.	100	.	.	.	.	.
1915	112	115	117	118	120	125	125	125	125	130	132	135
1916	135	135	137	138	142	145	147	148	150	153	160	165
1917	165	167	170	172	175	177	180	180	182	178	185	185
1918	187	190	190	193	197	200	203	210	210	216	222	220
1919	220	220	215	210	205	204	208	215	215	220	225	225
1920	225	230	230	232	241	250	252	255	261	264	276	269
1921	265	251	241	233	228	219	219	222	220	210	203	199
1922	192	188	186	182	181	180	184	181	179	178	180	180

(During 1915-1919, the approximate average is taken when a range, instead of a precise figure, is given in the official source.)

	3. Wages (Weekly Earnings)											
	Jan.	Feb.	Mar.	Apr.	May	June	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1914	.	.	.	.	.	.	100	.	.	.	.	.
1915	.	.	.	.	.	.	105-110	.	.	.	.	.
1916	.	.	.	.	.	.	115-120	.	.	.	.	.
1917	.	.	.	.	.	.	135-140	.	.	.	.	.
1918	.	.	.	.	.	.	175-180	.	.	.	.	.
1919	206	207	207	207	209	210	216	216	218	218	220	226
1920	229	229	234	235	253	261	264	266	270	270	274	276
1921	227	276	275	271	269	264	253	243	237	233	227	223
1922	217	214	214	206	202	197	194	191	181	180	179	178

Sources of wage index:

1914-1918: A.L.Bowley, "Prices and Wages in the United Kingdom, 1914-1920", page 106.

1919-1922: London & Cambridge Economic Service.

(The index is largely based on changes in time-rates and piece-rates; but it excludes increases in piece-rates given to compensate a simultaneous reduction in working hours - as was quite general in 1919. By 1924, this index underestimated actual earnings for a normal week by some 5 to 10% - cf. Memorandum no. 12 of the Royal Economic Society.)

Diagram IV

Exchange Rate of the £ in terms of United States Dollars

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1914	4.86	4.86	4.86	4.87	4.88	4.88	4.90	5.06	4.97	4.95	4.89	4.87
1915	4.84	4.82	4.80	4.79	4.79	4.77	4.77	4.69	4.68	4.67	4.72	4.75
1916	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76
1917	4.76	4.76	4.75	4.76	4.76	4.75	4.76	4.76	4.76	4.75	4.75	4.75
1918	4.75	4.75	4.75	4.75	4.75	4.76	4.76	4.75	4.75	4.76	4.76	4.76
1919	4.77	4.76	4.72	4.66	4.67	4.62	4.43	4.27	4.18	4.18	4.10	3.81
1920	3.68	3.38	3.72	3.93	3.85	3.95	3.87	3.62	3.51	3.48	3.44	3.49
1921	3.74	3.88	3.91	3.93	3.98	3.78	3.65	3.65	3.72	3.87	3.97	4.16
1922	4.23	4.36	4.38	4.41	4.45	4.45	4.45	4.47	4.43	4.44	4.46	4.61

Diagram V

Quarterly Production and Export (Quantum) Indices.

	1913		1920		1921		1922		1923	
	P	E	P	E	P	E	P	E	P	E
I	101	127	105	91	83	68	76	85	89	95
II	99	130	101	95	48	50	79	84	89	105
III	96	134	102	98	77	62	85	93	85	95
IV	104	134	92	88	63	82	83	98	92	110

Production: 1913 = 100

Exports: revalued at 1913 prices, in £ (000,000's).

Sources: Production: London & Cambridge Economic Service.

Exports: *Board of Trade Journal*

Note: There is an annual export index figure for 1919 which works out as a quarterly equivalent of 72. The production index used does not go back before 1920, but the annual index used in Diagram I showed a figure of 2% below 1920 in 1919. Applying this to the annual average for 1920 of the index used in this diagram, we obtain 98 for production in 1919. Direct comparison of 1919 with 1913 on the basis of the index of Diagram I works out at 89; but it may be presumed that Hoffmann's index is a more reliable indicator for changes over a period of one year than over one of six.

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